JVC

SCHEMATIC DIAGRAMS

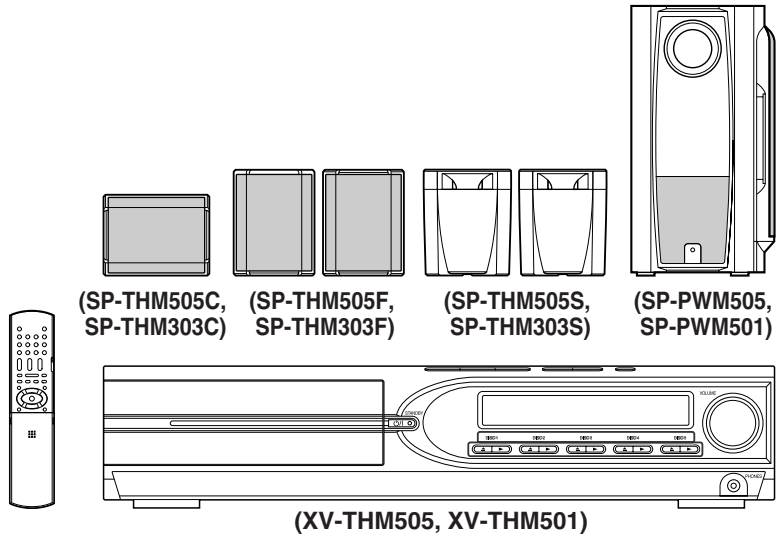
DVD DIGITAL THEATER SYSTEM

TH-M505,TH-M501

CD-ROM No.SML200405

TH-M505
Area suffix
J ---------- U.S.A. C ---------- Canada

TH-M501
Area suffix
J ---------- U.S.A.



(SP-THM505C, SP-THM303C) (SP-THM505F, SP-THM303F) (SP-THM505S, SP-THM303S) (SP-PWM505, SP-PWM501)

(XV-THM505, XV-THM501)

AV COMPU LINK
Digital Direct Progressive Scan

Contents

Block diagram ---------- 2-1
Standard schematic diagrams ---------- 2-3
Printed circuit boards ---------- 2-27 to 36

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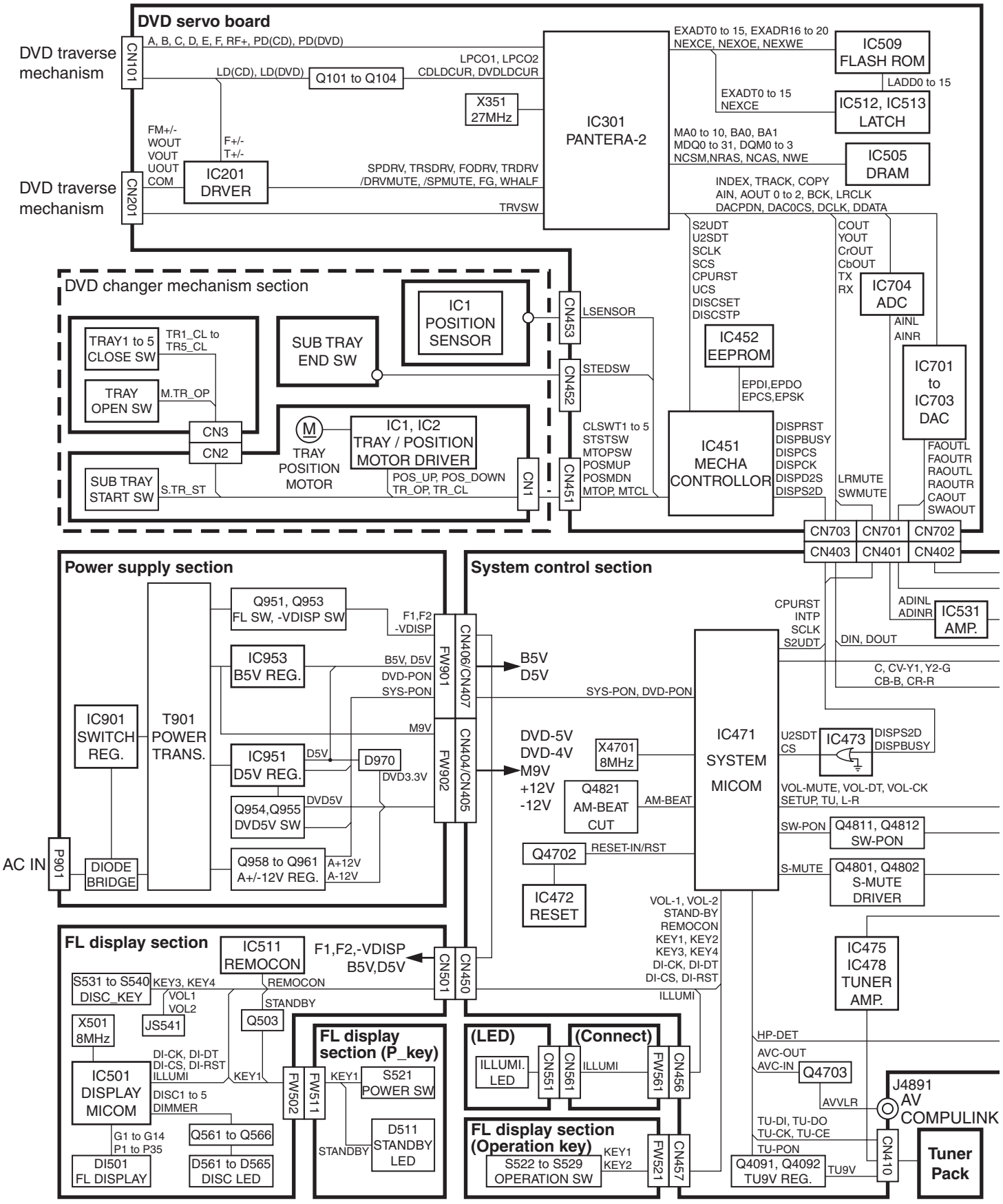
No.MB192SCH
2004/5

In regard with component parts appearing on the silk-screen printed side (parts side) of the PWB diagrams, the parts that are printed over with black such as the resistor (▬), diode (▬) and ICP (●) or identified by the "⚠" mark nearby are critical for safety.
(This regulation does not correspond to J and C version.)

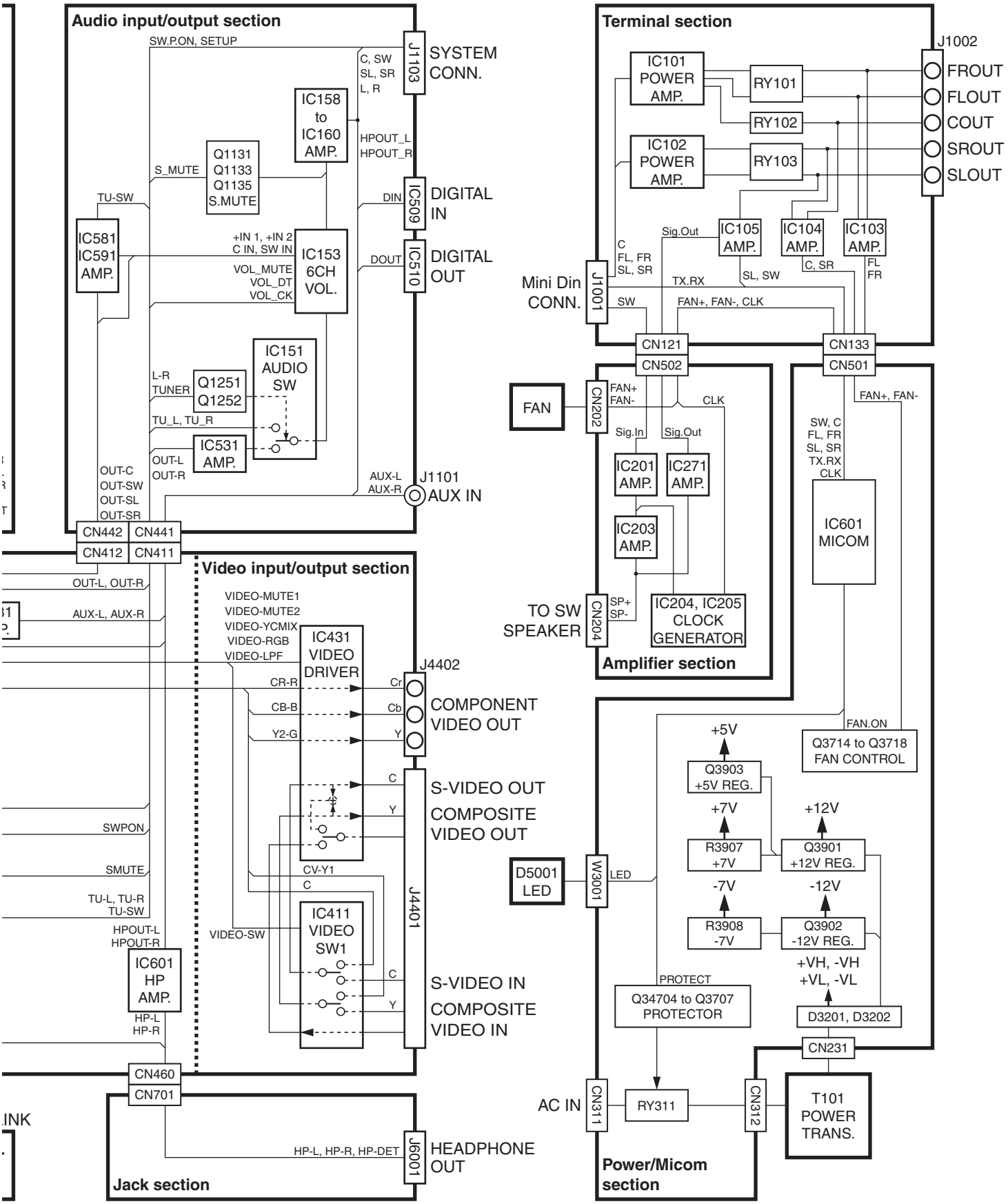
< MEMO >

Block diagram

<Main body section>



<Subwoofer section>

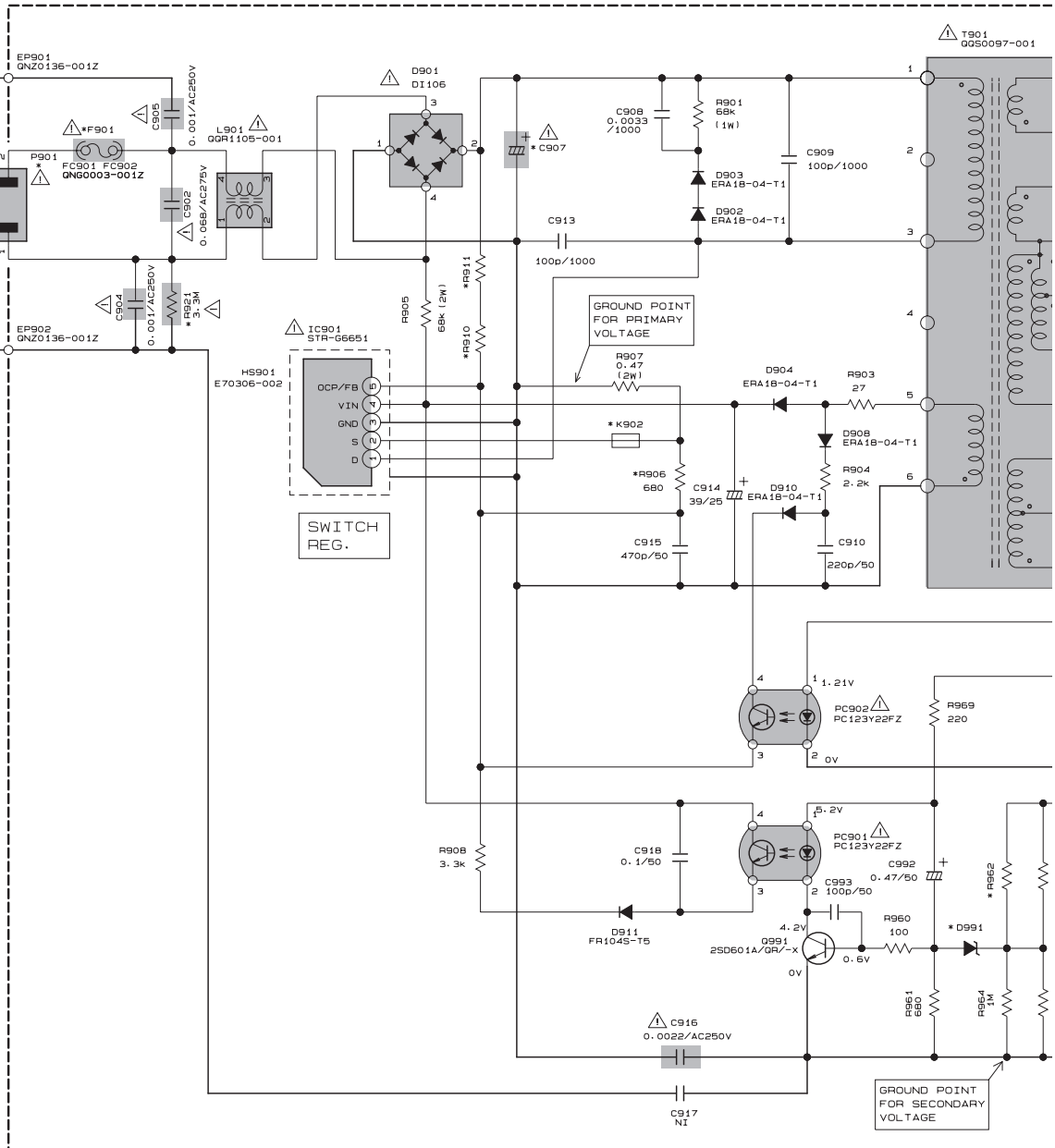


Standard schematic diagrams

<Main body section>

■ Power supply section

Ver. J/C
120V 60Hz
Ver. B/E/EN/EV/EE
230V 50Hz
Ver. US/UW/UJ/UG UX/UT
110-240V 50/60Hz
Ver. A
240V 50Hz



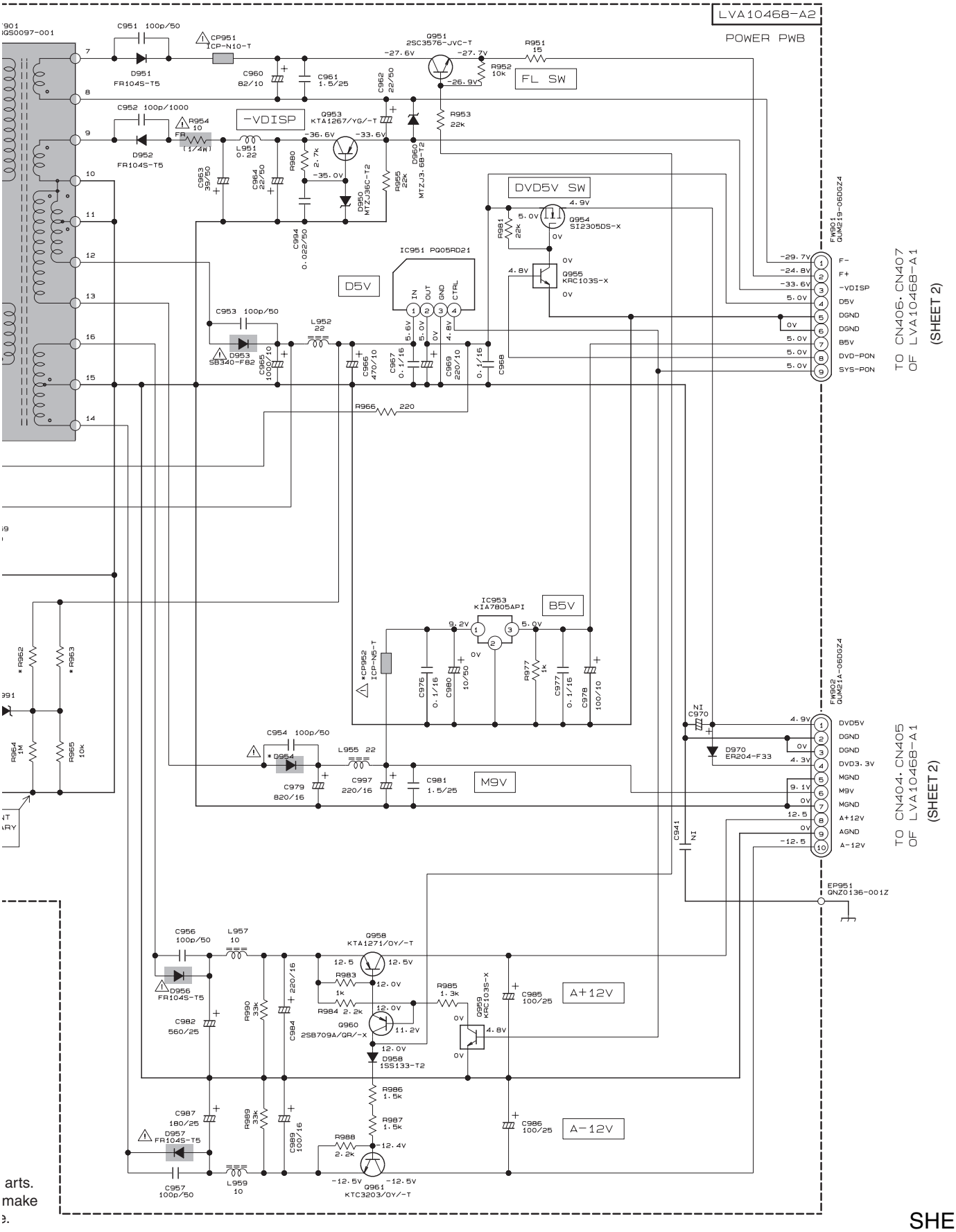
REF No. \ Ver.	ADDRESS	D	J/C	B/E/EN/EE/EV	UG/US/UW/UJ /A/UX/UT
*F901	(A-3)	QMF51U1-1R6-J8 (1.6A/125V)	QMF51U1-1R6-J8 (1.6A/125V)	QMF51W2-1R6-J8 (T1.6AL)	QMF51W2-1R6-J8 (T1.6AL)
*R962	(E-7)	1M	1M	NONE	NONE
*R963	(E-8)	100	100	180	180
*D991	(F-7)	MTZJ5.1C-T2	MTZJ5.1C-T2	MTZJ5.1B-T2	MTZJ5.1B-T2
*K902	(C-5)	QQR0779-001Z	QQR0779-001Z	0 (B3199)	0 (B3199)
*R921	(B-3)	NONE	3.3M	NONE	NONE
*P901	(B-2)	QNC0081-001	QNC0082-001	QNC0081-001	QNC0081-001
*R910 *R911	(B-5)	750k	750k	470k	470k
*CP952	(F-10)	0 (B3198)	ICP-N5-T	ICP-N5-T	ICP-N5-T

REF No. \ Ver.	ADDRESS	D	J/C	B/E/EN/EE/EV /A	US/UW/UJ/UG /UX/UT
*C907	(B-5)	QETM2DM-157 (150/200)	QETM2DM-157 (150/200)	QETM2GM-686 (68/400)	QETM2GM-107 (100/400)
*D954	(F-9)	FR104S-T5	ERA18-04-T1	FR104S-T5	FR104S-T5

VERSION CODES

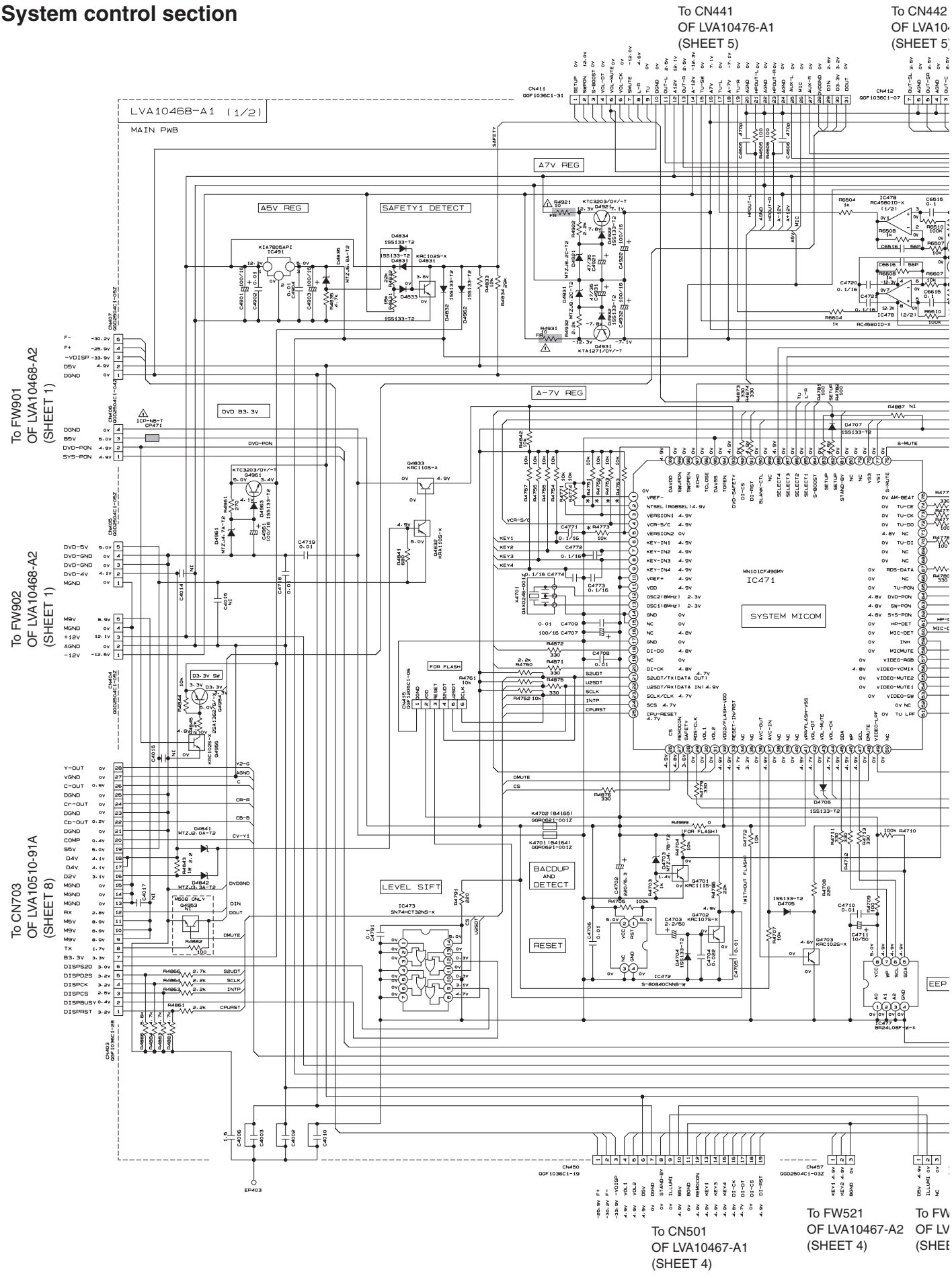
J :U.S.A.
C :CANADA
E :GERMANY/FRANCE/HOLLAND
B :GREAT BRITAIN
EE:RUSSIA
EN:SWEDEN/NORWAY/FINLAND/DENMARK
EV:EAST EUROPE
A :AUSTRALIA
UW:BRAZIL/MEXICO/PERU
US:SINGAPOLE
UJ:USA MILITALY BASE
UG:TURKEY/EGYPT/SOUTHAFRICA

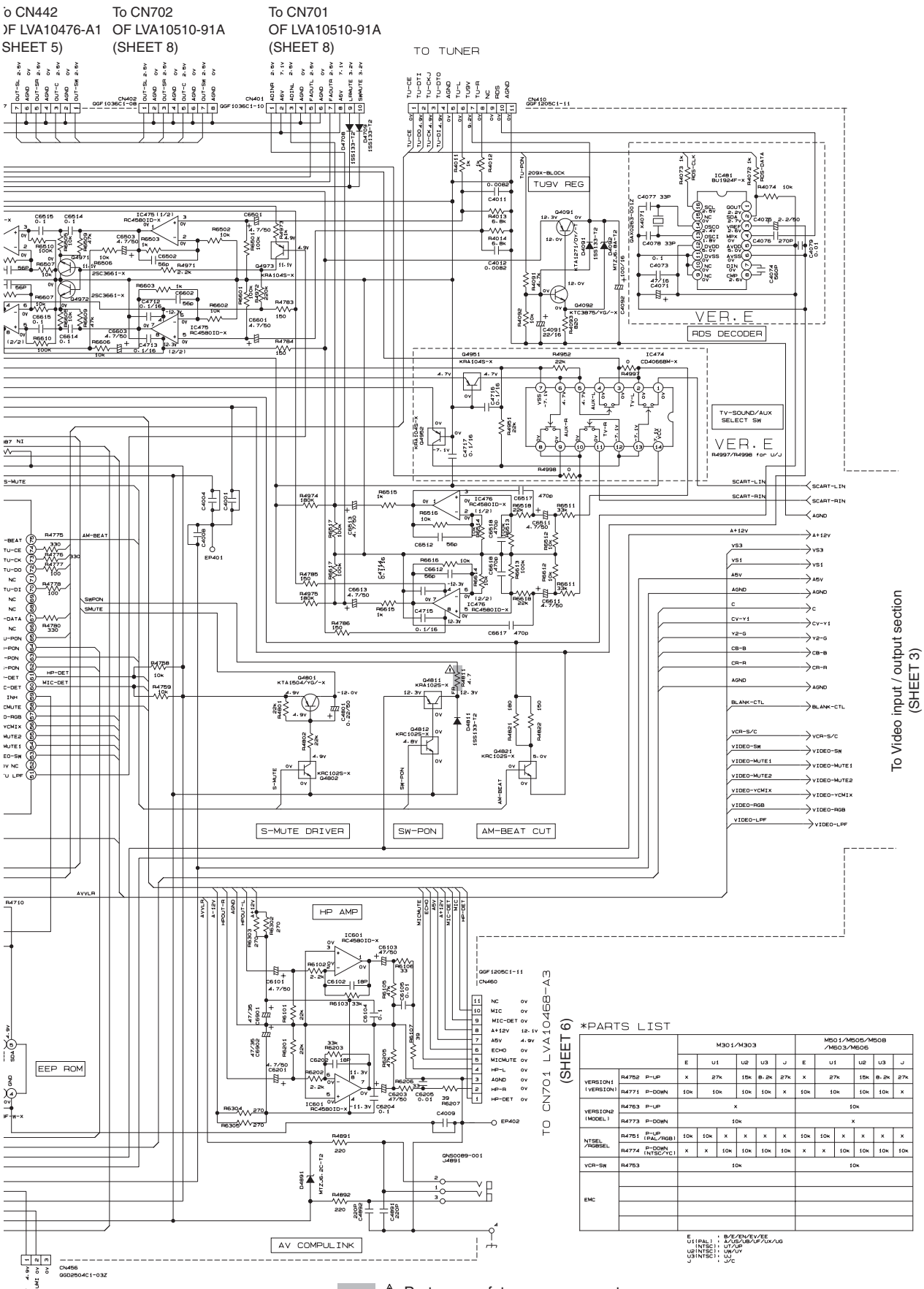
⚠ Parts are safety assurance parts. When replacing those parts make sure to use the specified one.


LVA10468-A2
POWER PWB
FL SW
-VDISP
DVD5V SW
D5V
B5V
M9V
A+12V
A-12V
IC951 PQ05RD21
IC953 KIA7805API
Q951 2SC3576-JVC-T
Q953 KTA1267/YG/-T
Q954 SI2305DS-X
Q955 KRC103S-X
Q958 KTA1271/OY/-T
Q959 KRC103S-X
Q960 2SB709A/QR/-X
Q961 KTC3203/OY/-T
D951 FR104S-T5
D952 FR104S-T5
D953 SB340-F82
D954
D956 FR104S-T5
D957 FR104S-T5
D958 1SS133-T2
D970 ER204-F33
FW901 QUM219-06DGZ4
FW902 QUM21A-06DGZ4
EP951 QNZ0136-001Z
TO CN406. CN407 OF LVA10468-A1 (SHEET 2)
TO CN404. CN405 OF LVA10468-A1 (SHEET 2)

SHEET 1

■ System control section





*PARTS LIST

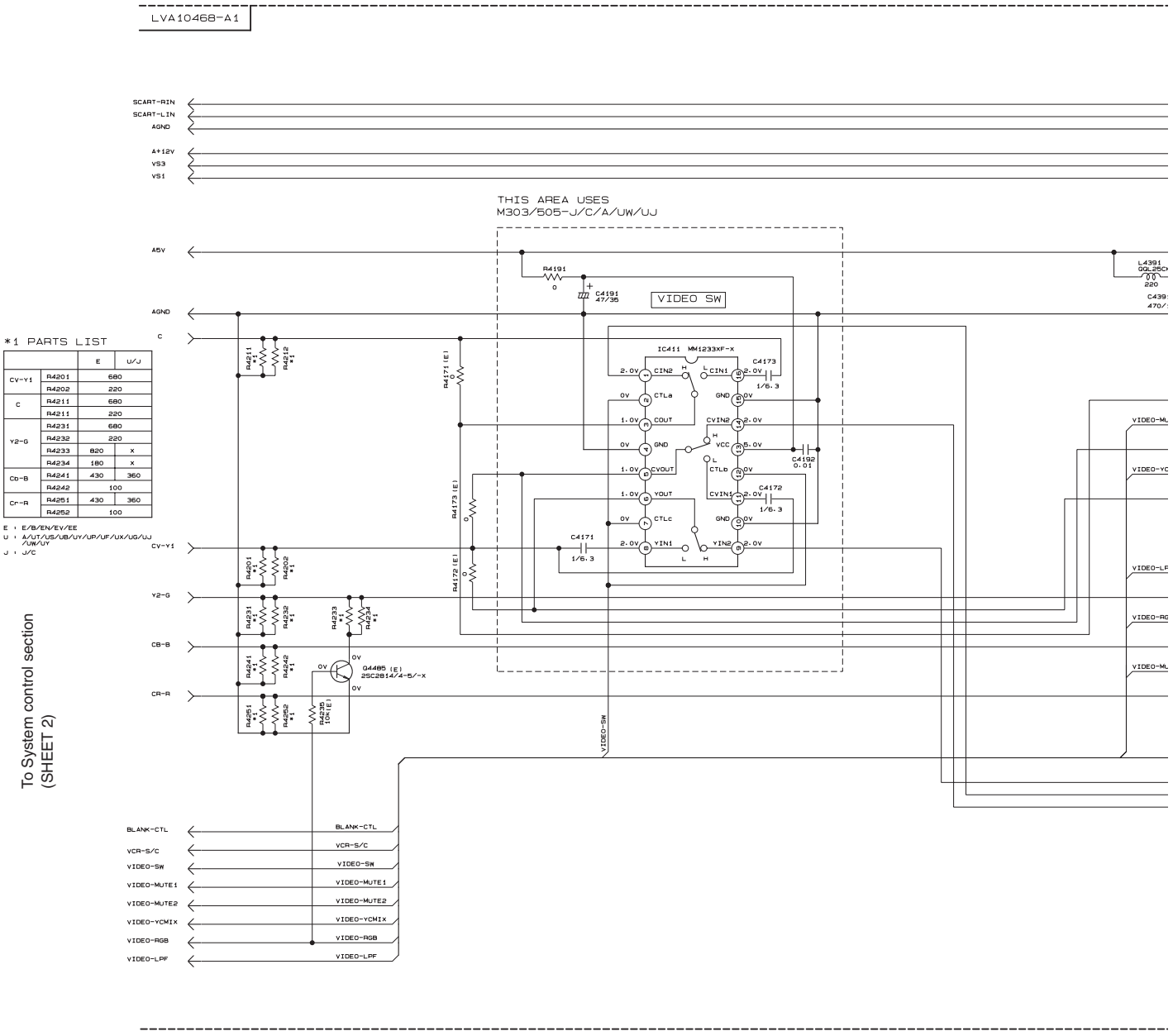
		M301/M303					M501/M505/M508 /M603/M606				
		E	U1	U2	U3	J	E	U1	U2	U3	J
VERSION1 (VERSION)	R4752 P-UP	x	27k	15k	8.2k	27k	x	27k	15k	8.2k	27k
	R4771 P-DOWN	10k	10k	10k	10k	x	10k	10k	10k	10k	x
VERSION2 (MODEL)	R4763 P-UP	x					10k				
	R4773 P-DOWN	10k					x				
NTSEL /RGBSEL	R4751 P-UP (PAL/RGB)	10k	10k	x	x	x	x	10k	10k	x	x	x	x
	R4774 P-DOWN (NTSC/YC)	x	x	10k	10k	10k	10k	x	x	10k	10k	10k	10k
VCR-SW	R4753	10k					10k				
EMC											

E : B/E/EN/EV/EE
U1(PAL) : A/US/UB/UF/UX/UG
U1(NTSC) : UT/UF
U2(NTSC) : UW/UV
U3(NTSC) : UJ
J : J/C

⚠ Parts are safety assurance parts. When replacing those parts make sure to use the specified one.

SHEET 2

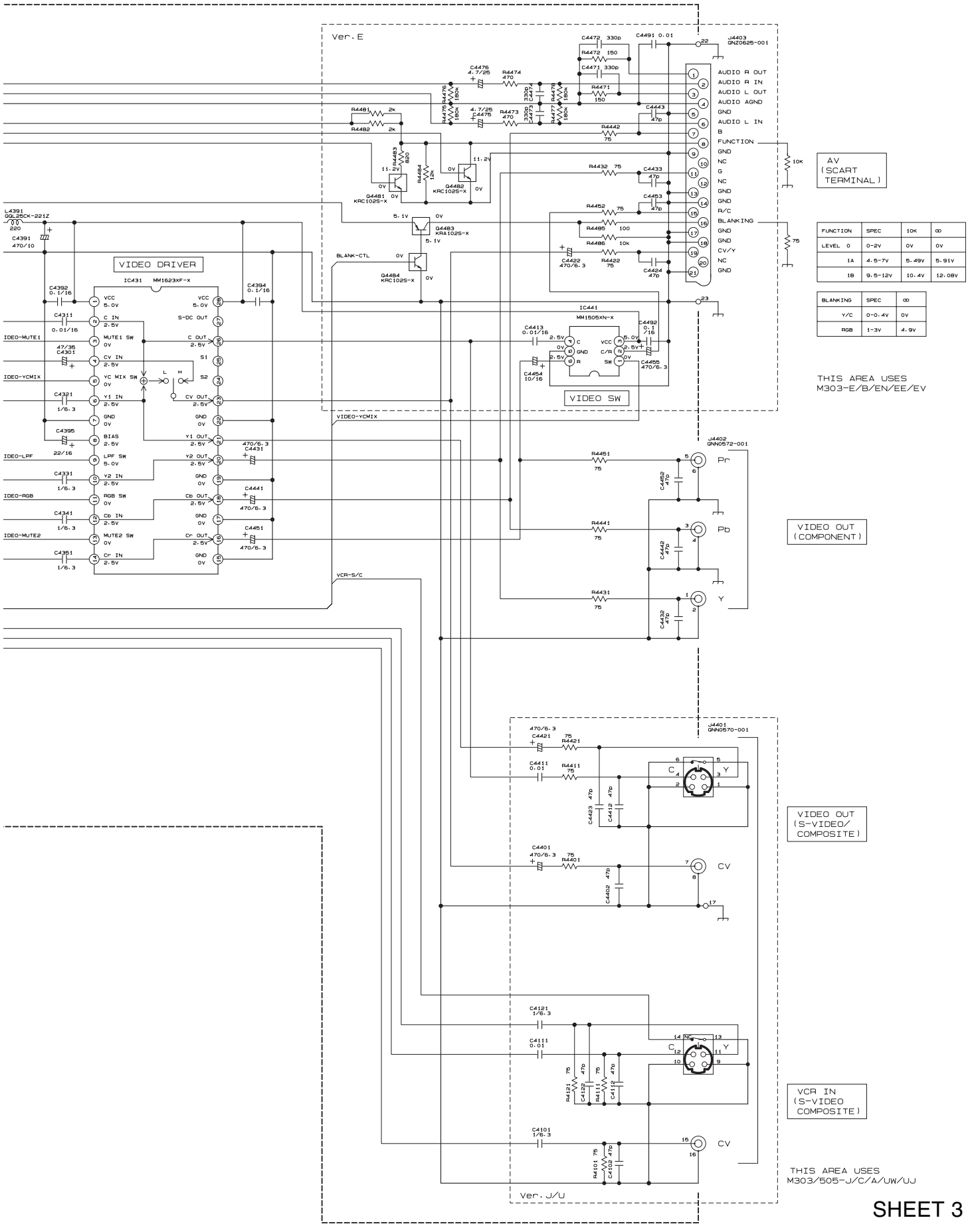
■ Video input / output section



*1 PARTS LIST

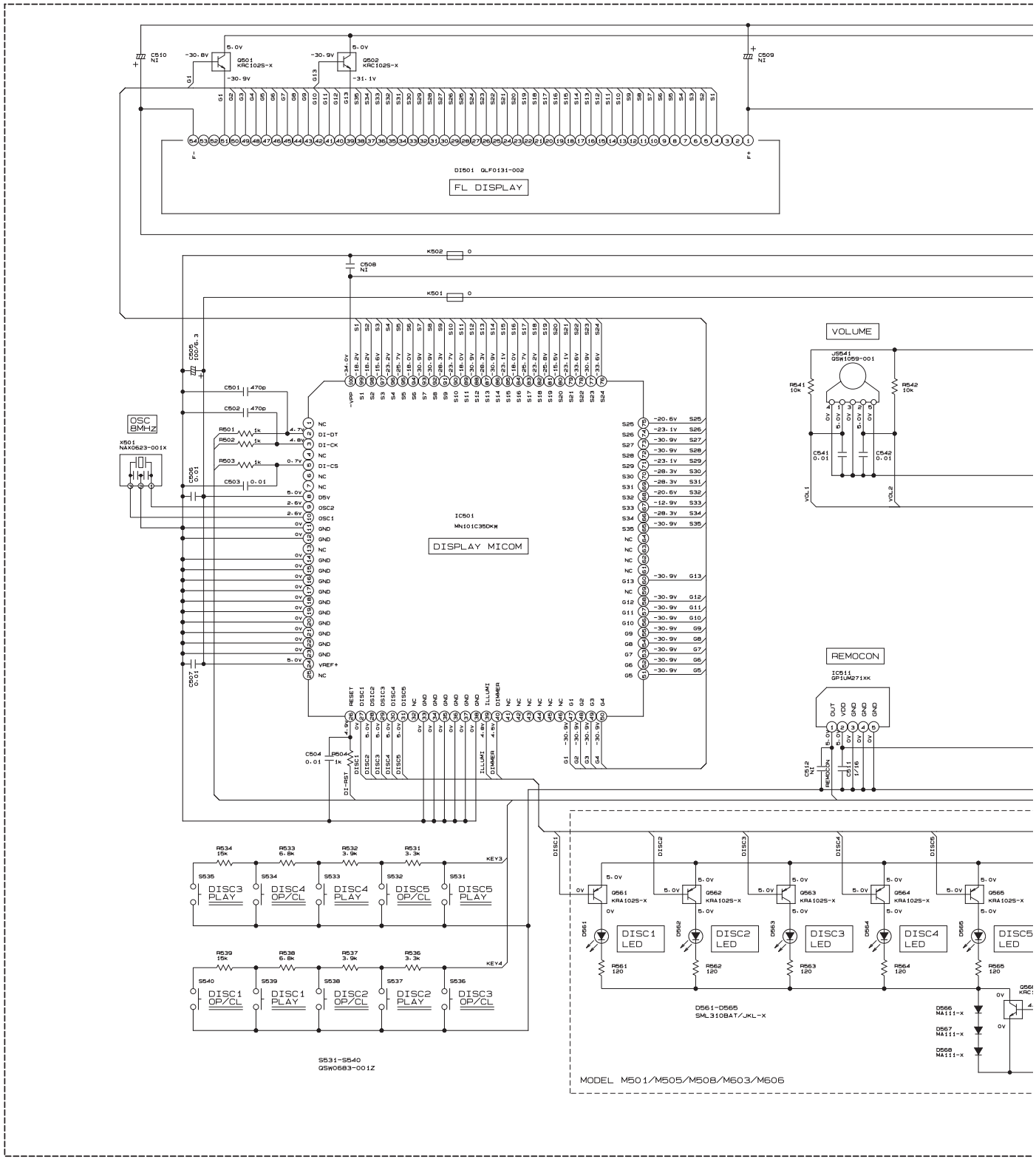
		E	U/J
CV-Y1	R4201	680	
	R4202	220	
C	R4211	680	
	R4211	220	
Y2-G	R4231	680	
	R4232	220	
	R4233	820	x
	R4234	180	x
CB-B	R4241	430	360
	R4242	100	
CR-R	R4251	430	360
	R4252	100	

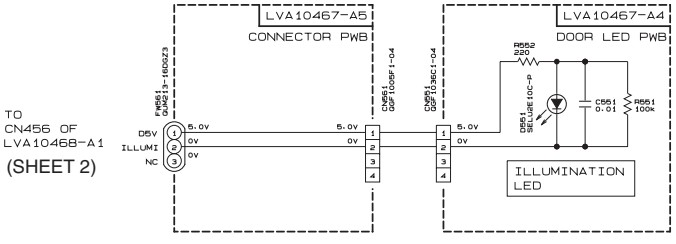
E : E/B/EN/EV/EE
U : A/UT/US/UB/UY/UP/UF/UX/UG/UJ /UW/UY
J : J/C

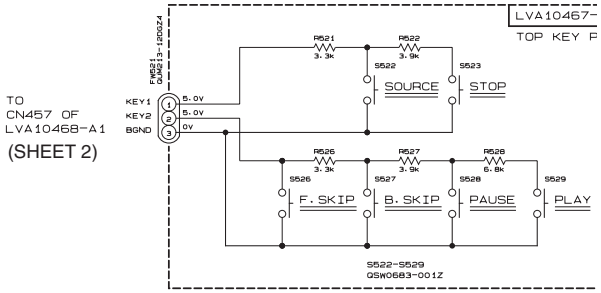

Ver.E
J4403
GNZ0625-001
AUDIO R OUT
AUDIO R IN
AUDIO L OUT
AUDIO AGND
GND
AUDIO L IN
B
FUNCTION
GND
NC
G
NC
GND
GND
R/C
BLANKING
GND
GND
CV/Y
NC
GND
AV
(SCART
TERMINAL)
FUNCTION | SPEC | 10K | OΩ
LEVEL 0 | 0-2V | 0V | 0V
1A | 4.5-7V | 5.49V | 5.91V
1B | 9.5-12V | 10.4V | 12.08V
BLANKING | SPEC | OΩ
Y/C | 0-0.4V | 0V
RGB | 1-3V | 4.9V
THIS AREA USES
M303-E/B/EN/EE/EV
VIDEO DRIVER
IC431 MM1623XF-x
VCC 5.0V
C IN 2.5V
MUTE1 SW 0V
CV IN 2.5V
YC MIX SW 0V
Y1 IN 2.5V
GND 0V
BIAS 2.5V
LPF SW 5.0V
Y2 IN 2.5V
RGB SW 0V
Cb IN 2.5V
MUTE2 SW 0V
Cr IN 2.5V
S-DC OUT
C OUT 2.5V
S1
S2
CV OUT 2.5V
Y1 OUT 2.5V
Y2 OUT 2.5V
Cb OUT 2.5V
Cr OUT 2.5V
IDEO-MUTE1
IDEO-YCMIX
IDEO-LPF
IDEO-RGB
IDEO-MUTE2
VIDEO-YCMIX
YCR-S/C
BLANK-CTL
IC441
MM1505XN-x
VIDEO SW
J4402
QNN0572-001
Pr
Pb
Y
VIDEO OUT
(COMPONENT)
J4401
QNN0570-001
C
Y
CV
VIDEO OUT
(S-VIDEO/
COMPOSITE)
VCR IN
(S-VIDEO
COMPOSITE)
Ver.J/U
THIS AREA USES
M303/505-J/C/A/UW/UJ

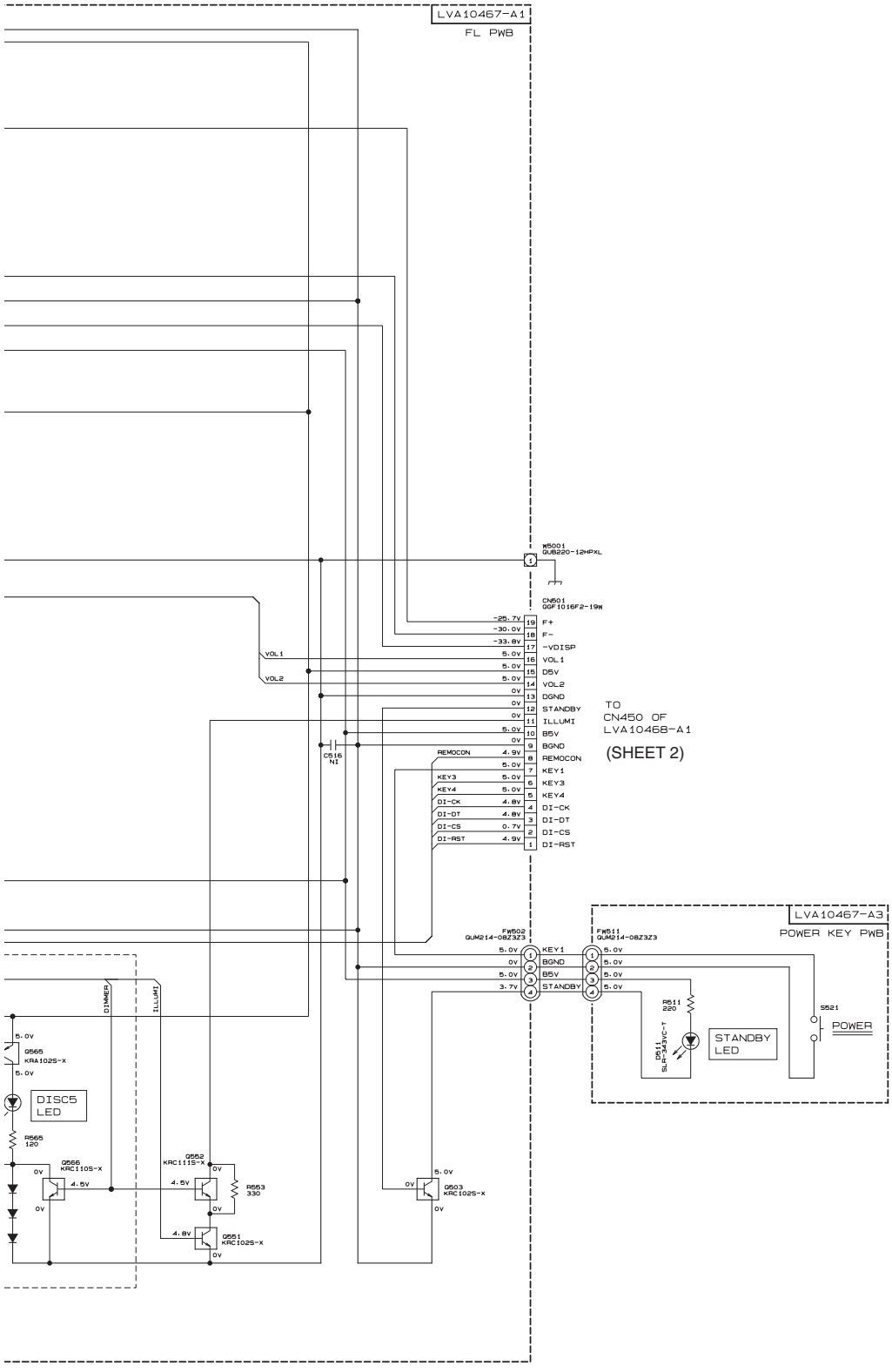
SHEET 3

■ FL display section



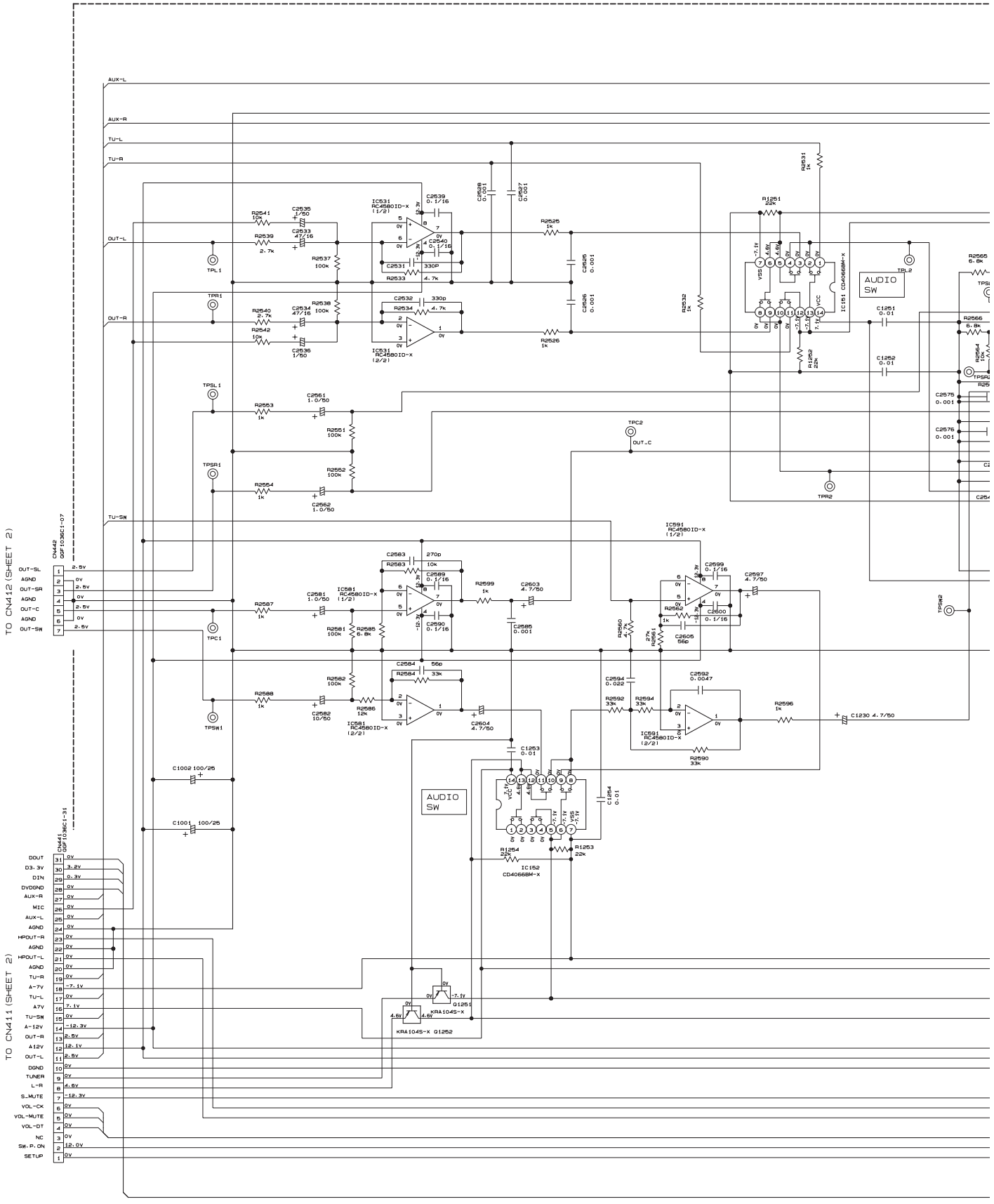





LVA10467-A1
FL PWB
M5001
GUB220-12HPXL
CN501
GGF1016F2-19W
-28.7V 19 F+
-30.0V 18 F-
-33.8V 17 -VDISP
5.0V 16 VOL1
5.0V 15 D5V
5.0V 14 VOL2
0V 13 DGND
0V 12 STANDBY
0V 11 ILLUMI
5.0V 10 B5V
0V 9 BGND
REMOCON 4.9V 8 REMOCON
5.0V 7 KEY1
KEY3 5.0V 6 KEY3
KEY4 5.0V 5 KEY4
DI-CK 4.8V 4 DI-CK
DI-DT 4.8V 3 DI-DT
DI-CS 0.7V 2 DI-CS
DI-RST 4.9V 1 DI-RST
VOL1
VOL2
C516
NI
TO
CN450 OF
LVA10468-A1
(SHEET 2)
LVA10467-A3
POWER KEY PWB
FW502
GUM214-08Z3Z3
FW511
GUM214-08Z3Z3
5.0V KEY1
0V BGND
5.0V B5V
3.7V STANDBY
5.0V
5.0V
5.0V
5.0V
R511
220
D511
SLR-343YC-T
STANDBY
LED
S521
POWER
DIMMER
ILLUMI
5.0V
Q565
KRA102S-X
5.0V
DISC5
LED
R565
120
Q566
KRC110S-X
0V
4.5V
0V
Q552
KRC111S-X
0V
4.5V
0V
R553
330
4.8V
Q551
KRC102S-X
0V
5.0V
0V
Q503
KRC102S-X
0V
LVA10467-A2
TOP KEY PWB
S529
PLAY

SHEET 4

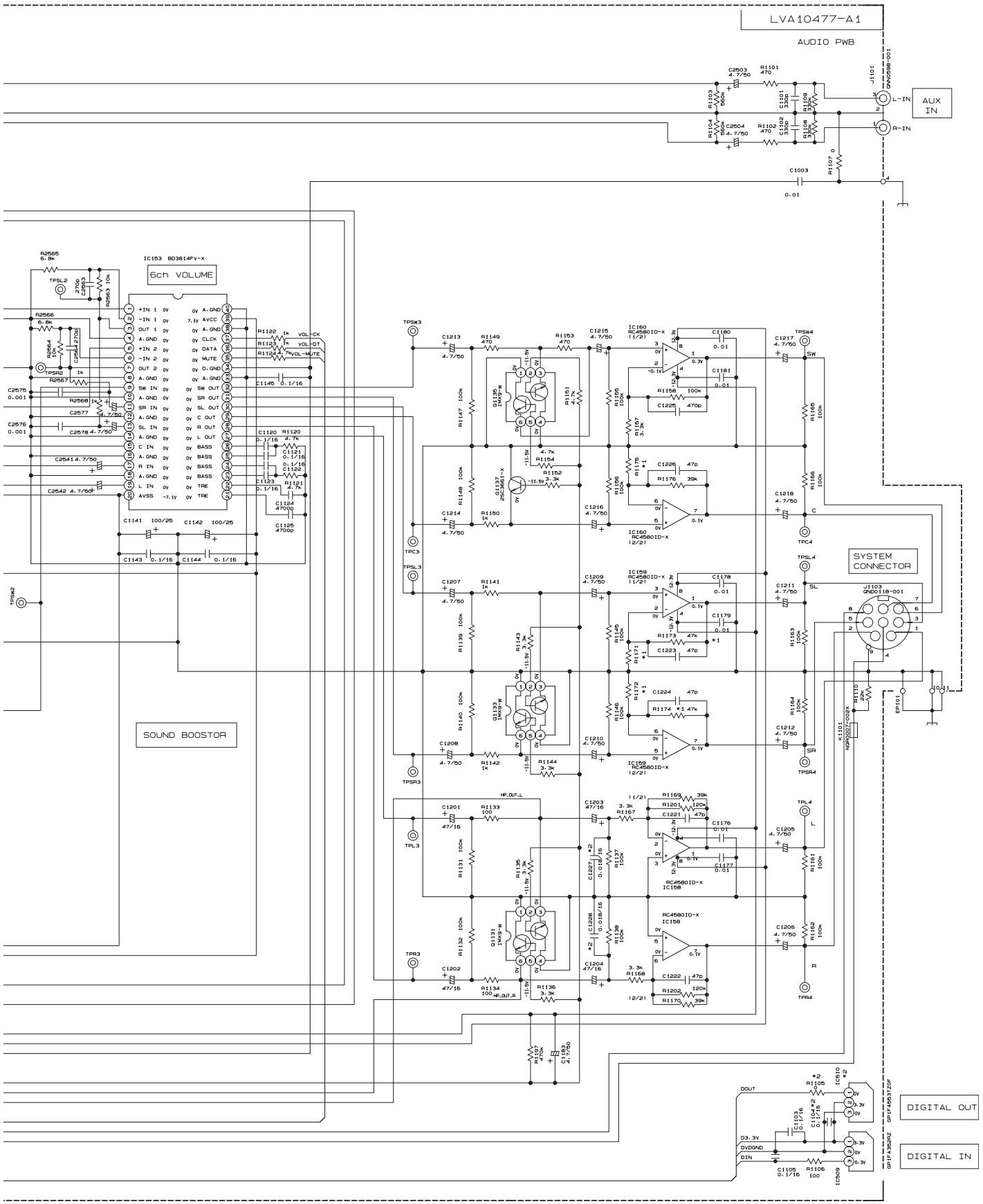
■ Audio input / output section



*1

XV-7

*2 USE

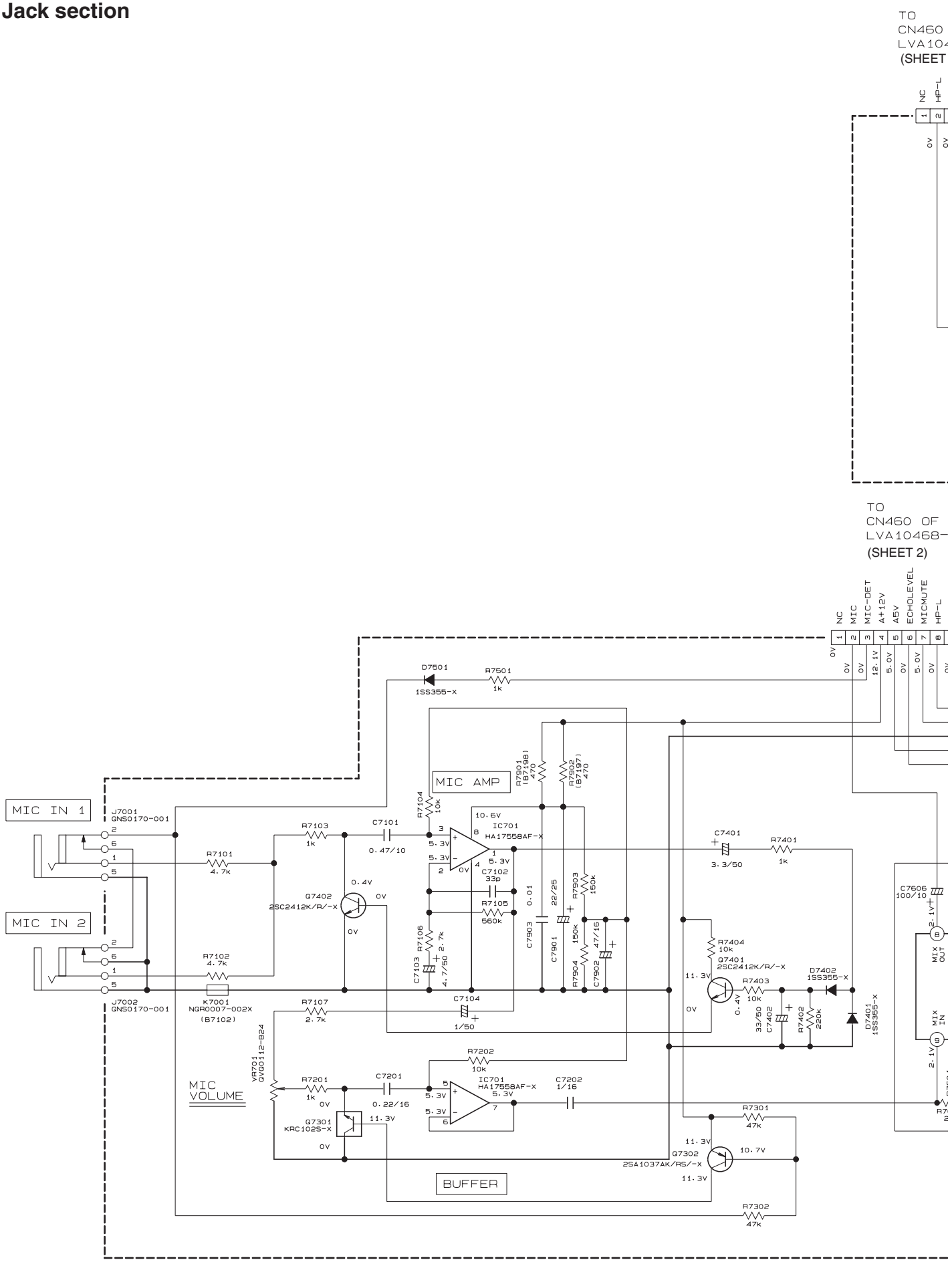


*1	R1175	R1173 R1174
XV-THM505/M501/M508/M603/M606	4.3k	5.1k
XV-THM303/M301	4.3k	3.3k

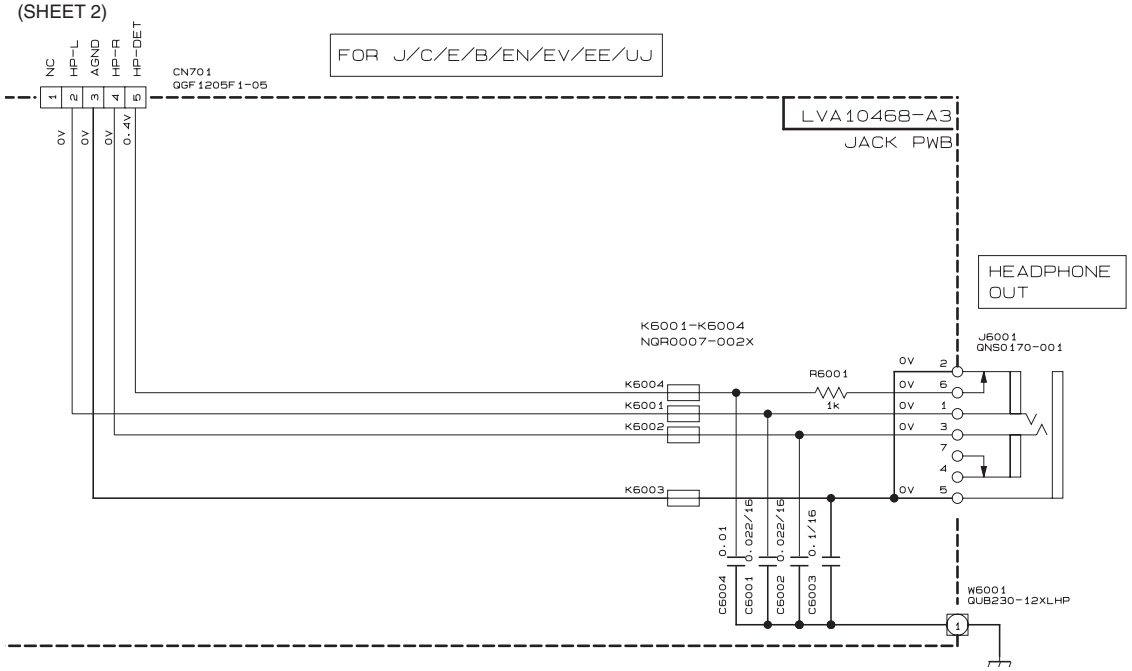
*2 USE M508

SHEET 5

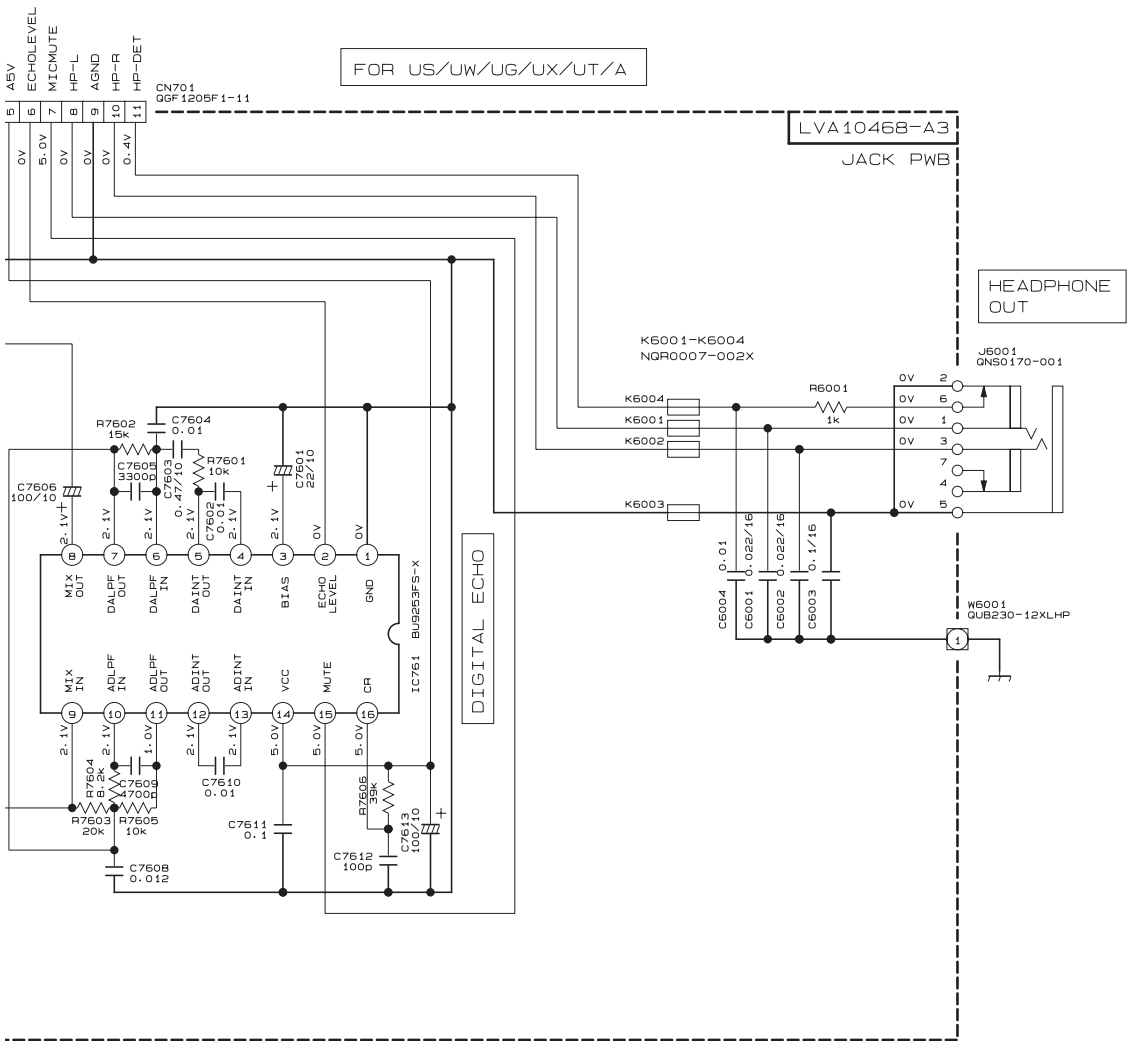
■ Jack section



TO
CN460 OF
LVA10468-A1
(SHEET 2)

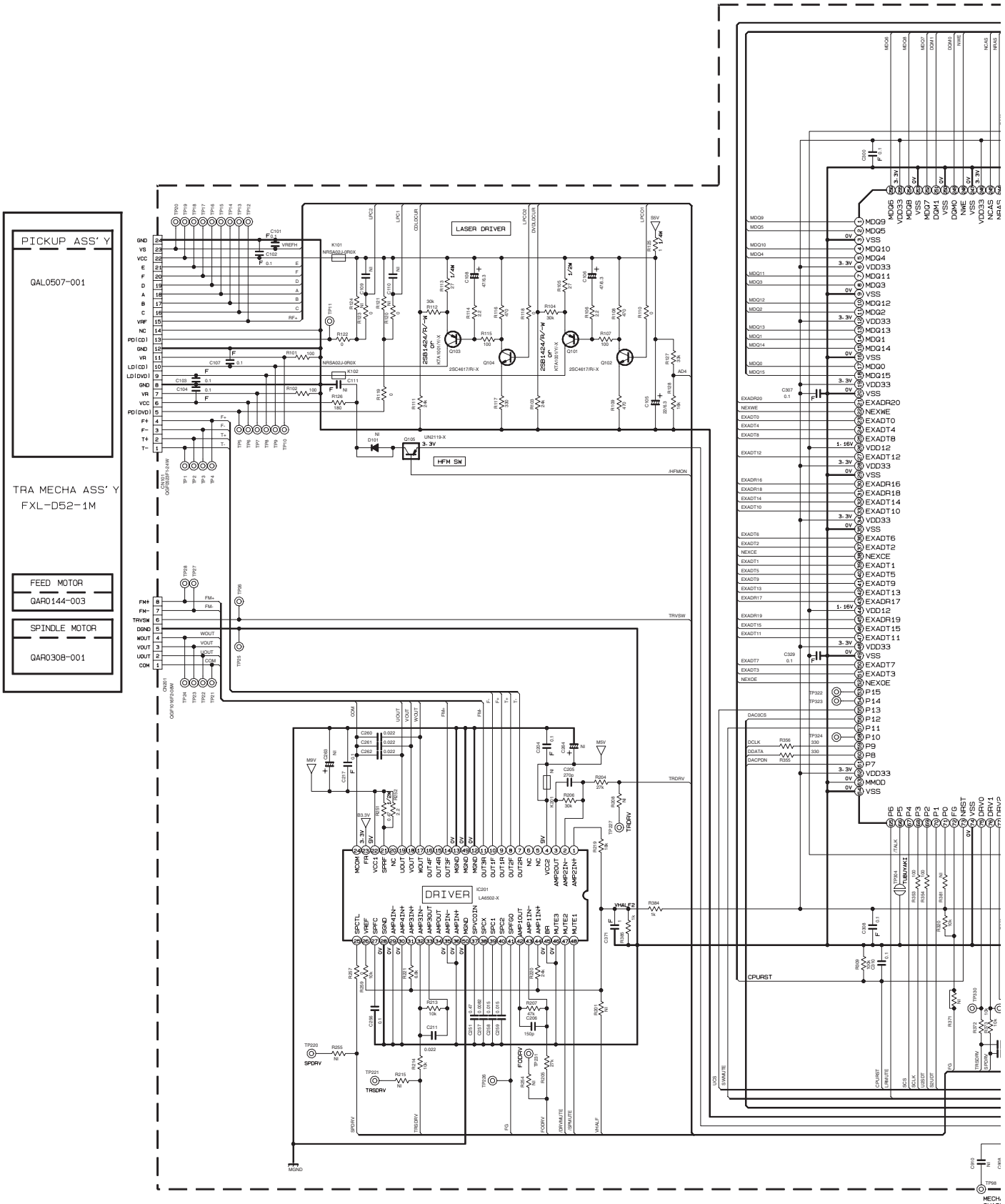


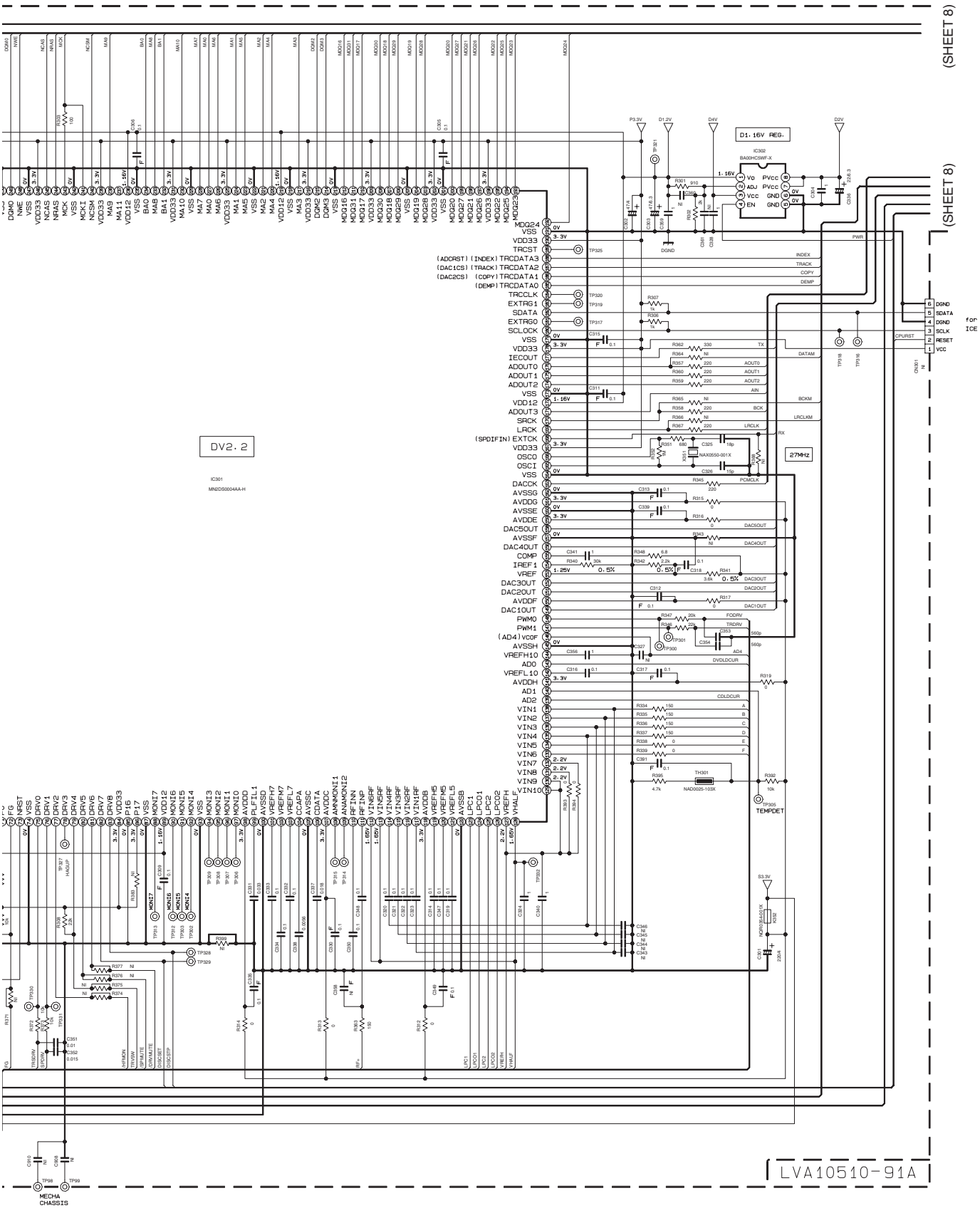
60 OF
.10468-A1
EET 2)



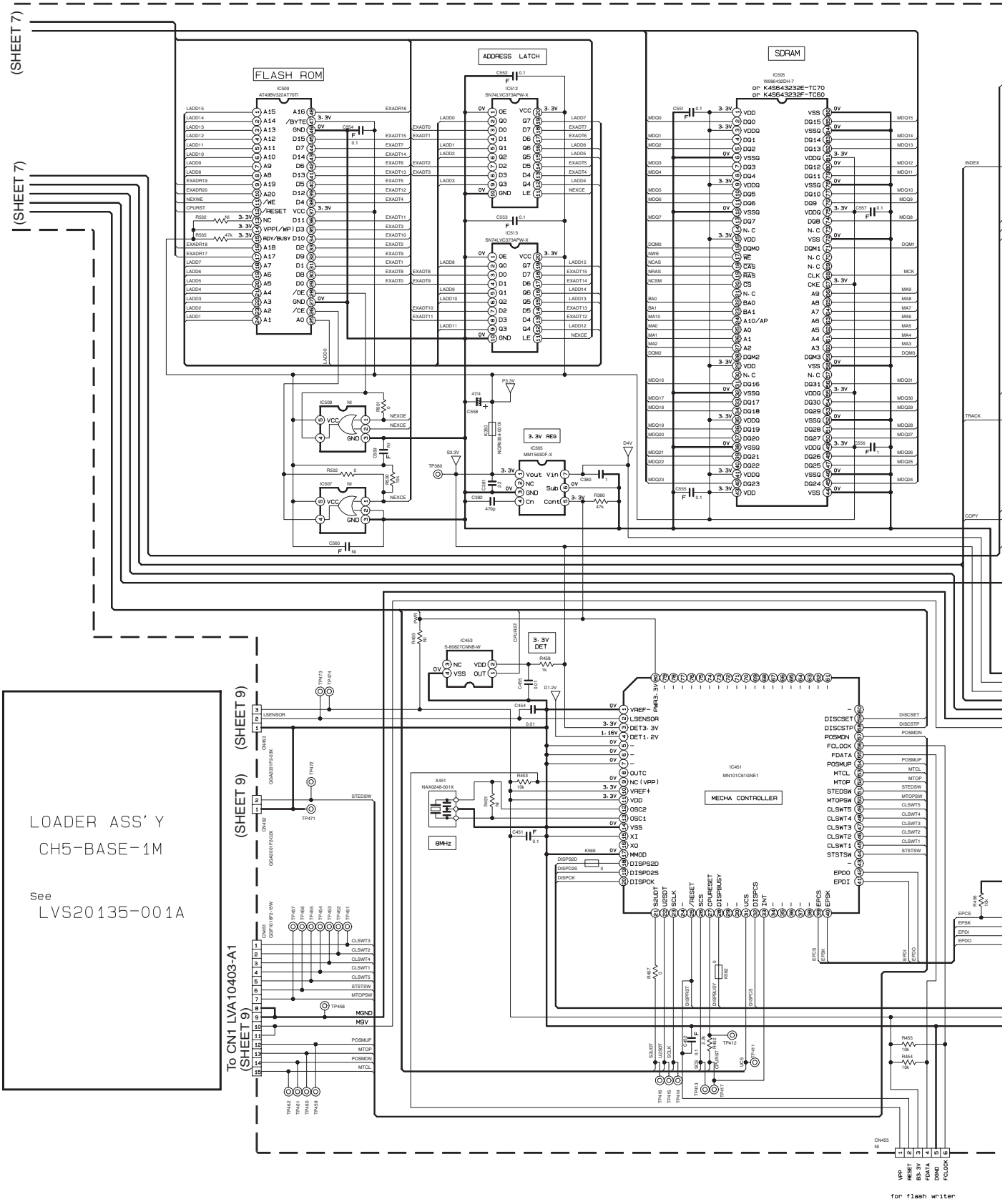
SHEET 6

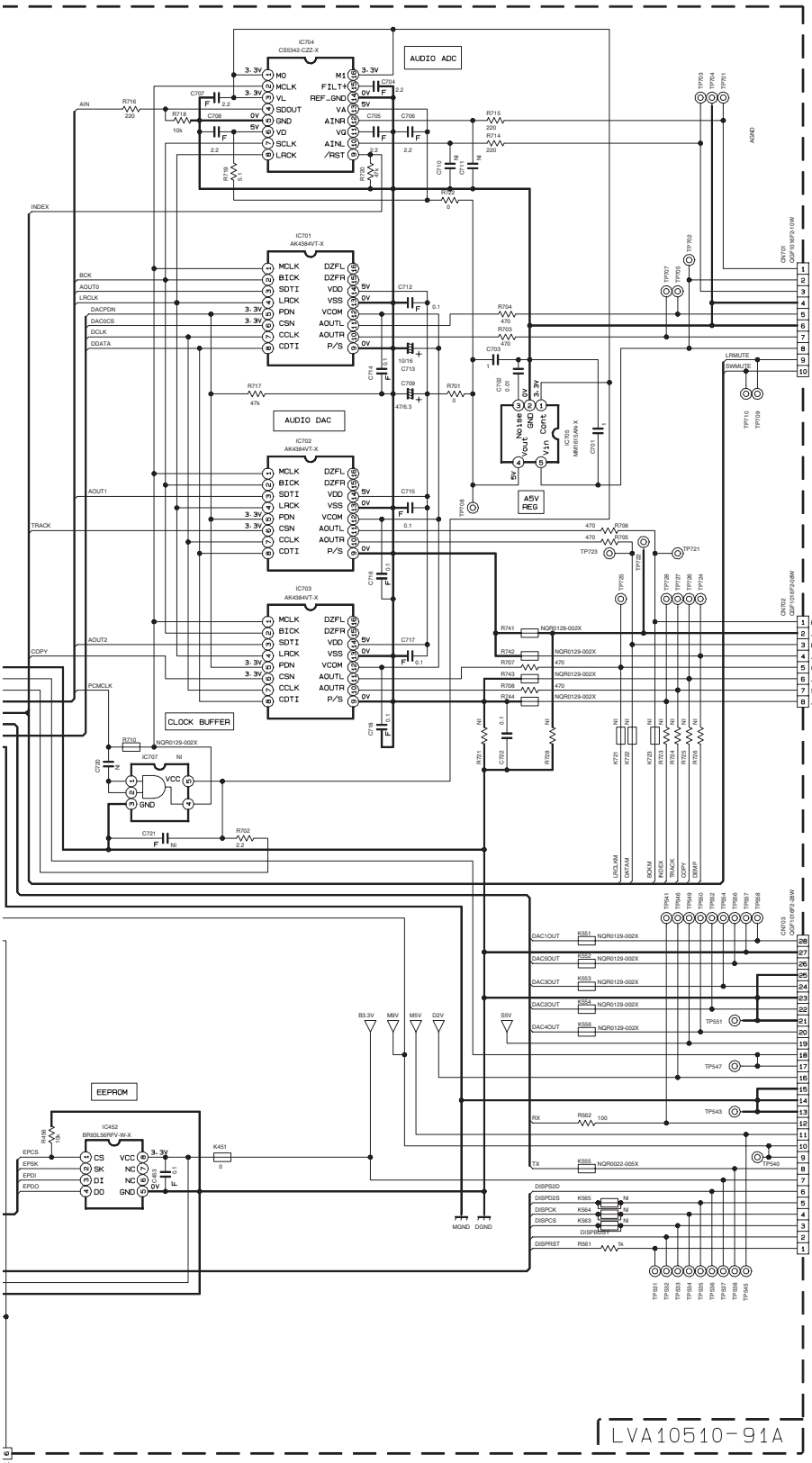
■ DVD servo section (1/2)




(SHEET 8)
(SHEET 8)
D1.16V REG.
IC302
BA00HCSWF-X
DV2.2
IC301
MN2DS0004AA-H
27MHz
NAX0550-001X
TH301
NAD0025-103K
TEMPDET
HDR1B4.0-2.5V
LVA10510-91A
MECHA CHASSIS
SHEET 7

■ DVD servo section (2/2)





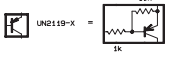
NOTES

1. VOLTAGES ARE DC-MEASURED WITH A DIGITAL VOLT METER WITHOUT INPUT SIGNAL.
   CONDITION ---- A DVD disc in the Tray 1. and STOP mode.

2. UNLESS OTHERWISE SPECIFIED.
   ALL RESISTORS ARE 1/10W ±5% METAL GLAZE RESISTOR. OR 0.5% METAL GLAZE RESISTOR.
   ALL CAPACITORS ARE 50V, 25V, 16V, 10V or 6.3V CERAMIC CAPACITOR.
   ALL RESISTANCE VALUES ARE IN OHM(Ω).
   ALL CAPACITANCE VALUES ARE IN μF(p=pF).
   ALL E.CAPACITORS ARE SHOWN IN THE FORM OF CAPACITANCE(μF)/RATED VOLTAGE (V).
   ALL INDUCTANCE VALUES ARE IN μH(m=mH).

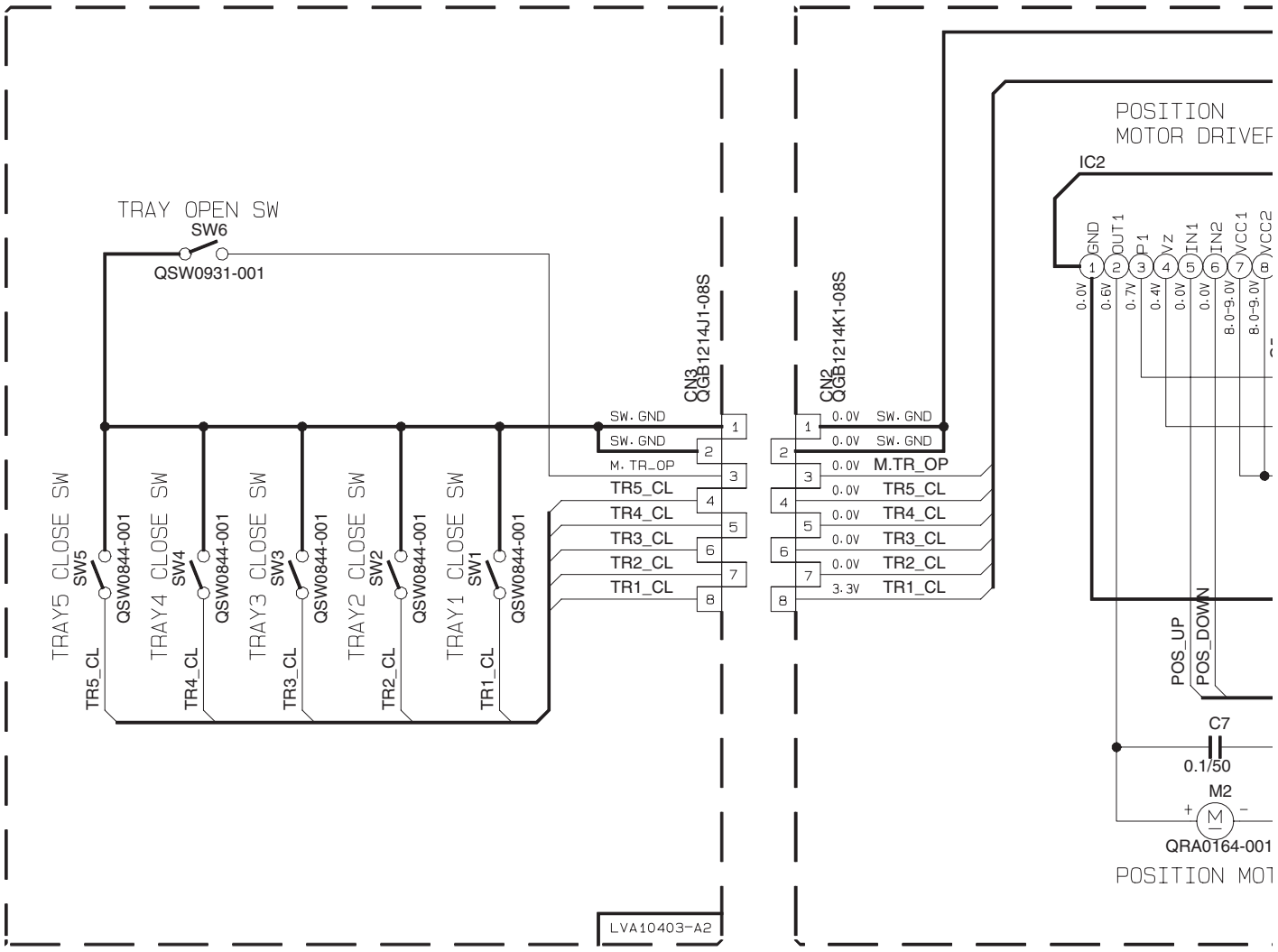
3. NI STANDS FOR NOT INSERTED PARTS.

4. DIGITAL TRANSISTOR



SHEET 8

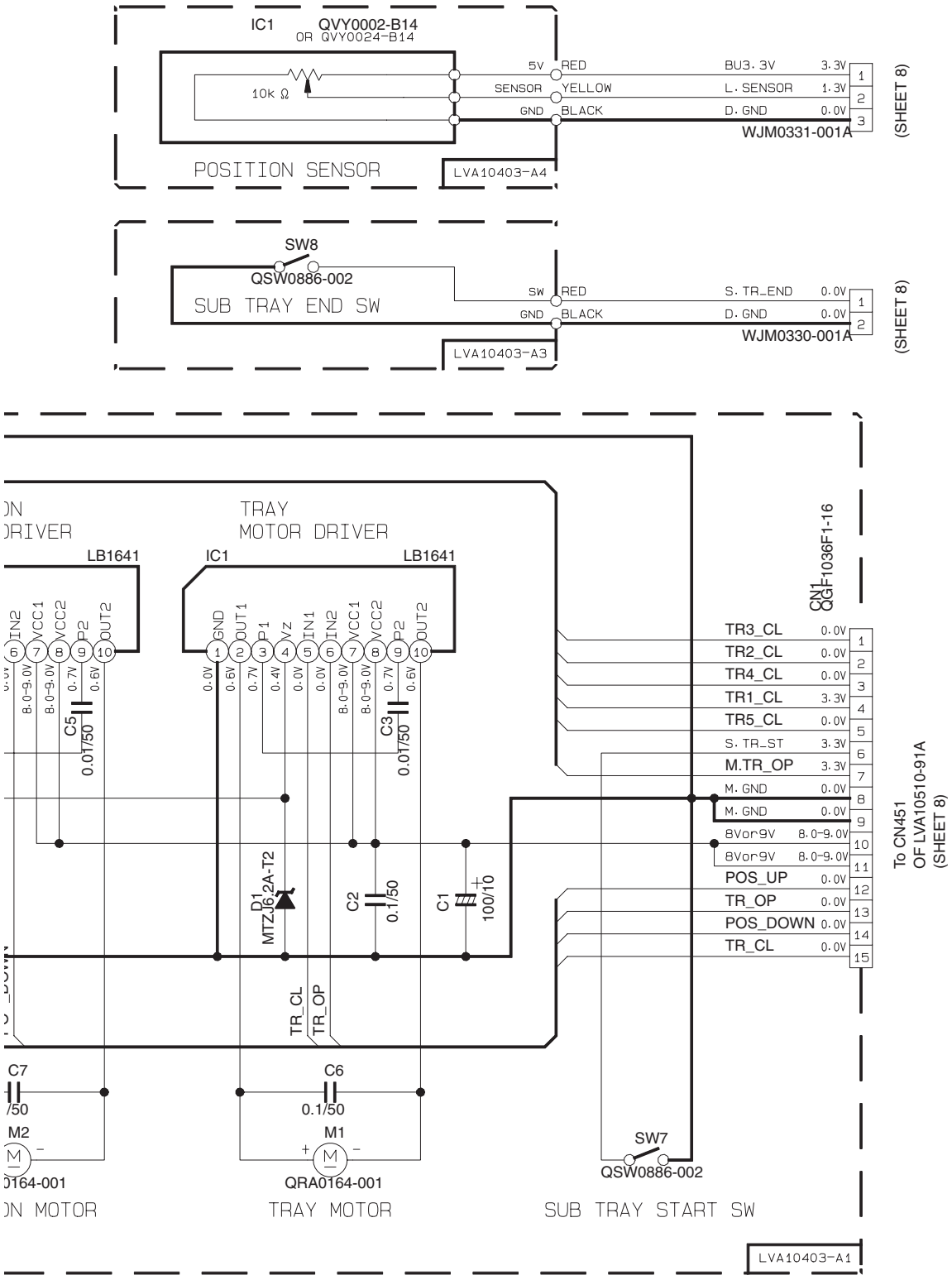
■ DVD changer mechanism section



NOTES

1. VOLTAGES ARE DC-MEASURED WITH A DIGITAL VOLT METER.
   CONDITION:DISC1 STOP

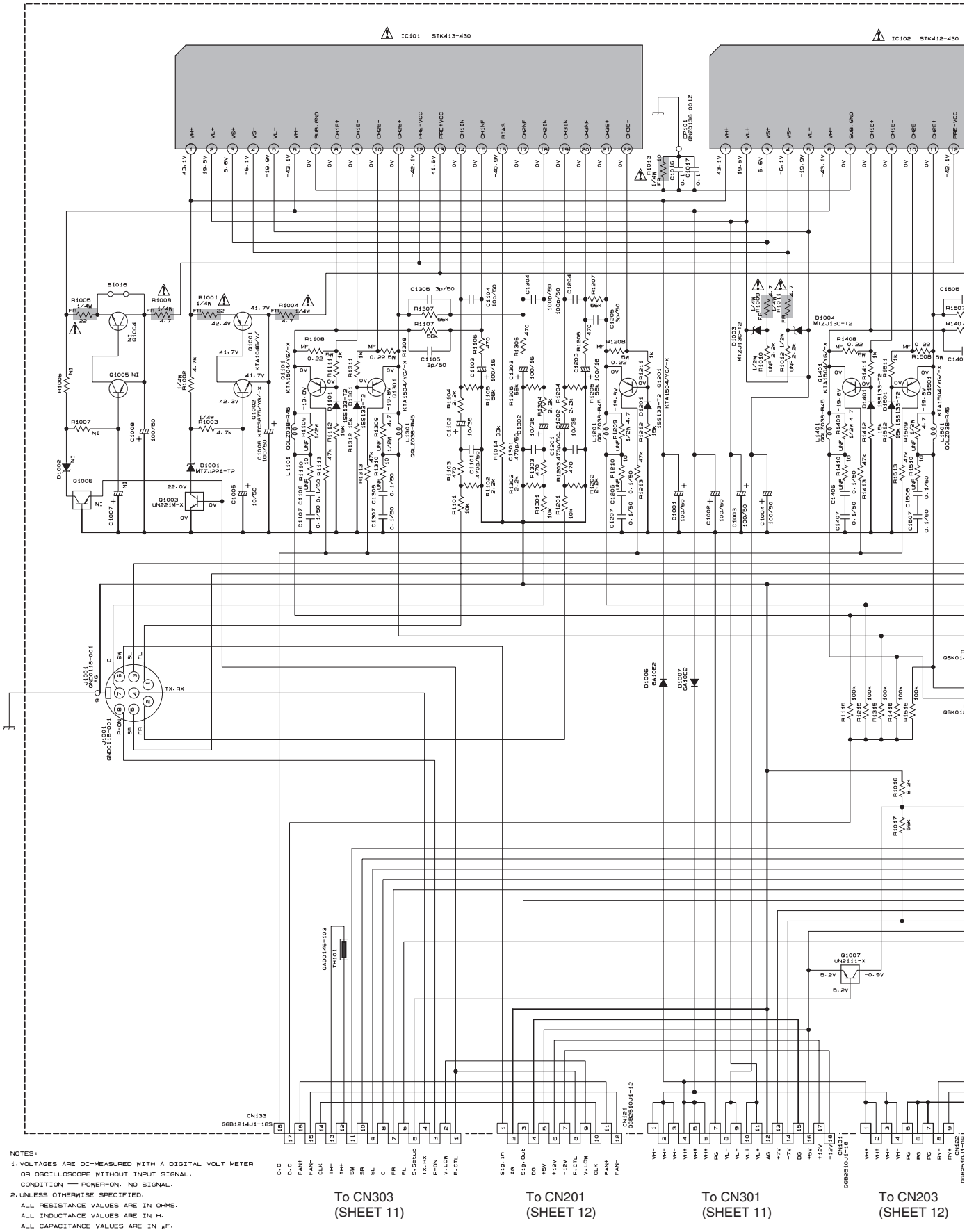
2. UNLESS OTHERWISE SPECIFIED.
   ALL CAPACITORS ARE SHOWN IN THE FORM OF CAPACITANCE(μF)/RATED VOLTAGE(V).


IC1 QVY0002-B14
OR QVY0024-B14
10k Ω
5V RED BU3.3V 3.3V 1
SENSOR YELLOW L.SENSOR 1.3V 2
GND BLACK D.GND 0.0V 3
WJM0331-001A
(SHEET 8)
POSITION SENSOR
LVA10403-A4
SW8
QSW0886-002
SUB TRAY END SW
SW RED S.TR_END 0.0V 1
GND BLACK D.GND 0.0V 2
WJM0330-001A
(SHEET 8)
LVA10403-A3
TRAY
MOTOR DRIVER
LB1641
IC1
LB1641
CN1
QGF1036F1-16
TR3_CL 0.0V 1
TR2_CL 0.0V 2
TR4_CL 0.0V 3
TR1_CL 3.3V 4
TR5_CL 0.0V 5
S.TR_ST 3.3V 6
M.TR_OP 3.3V 7
M.GND 0.0V 8
M.GND 0.0V 9
8Vor9V 8.0-9.0V 10
8Vor9V 8.0-9.0V 11
POS_UP 0.0V 12
TR_OP 0.0V 13
POS_DOWN 0.0V 14
TR_CL 0.0V 15
To CN451
OF LVA10510-91A
(SHEET 8)
C5
0.01/50
C3
0.01/50
D1
MTZJ6.2A-T2
C2
0.1/50
C1
100/10
TR_CL
TR_OP
C7
C6
0.1/50
M2
M1
QRA0164-001
SW7
QSW0886-002
SUB TRAY START SW
LVA10403-A1

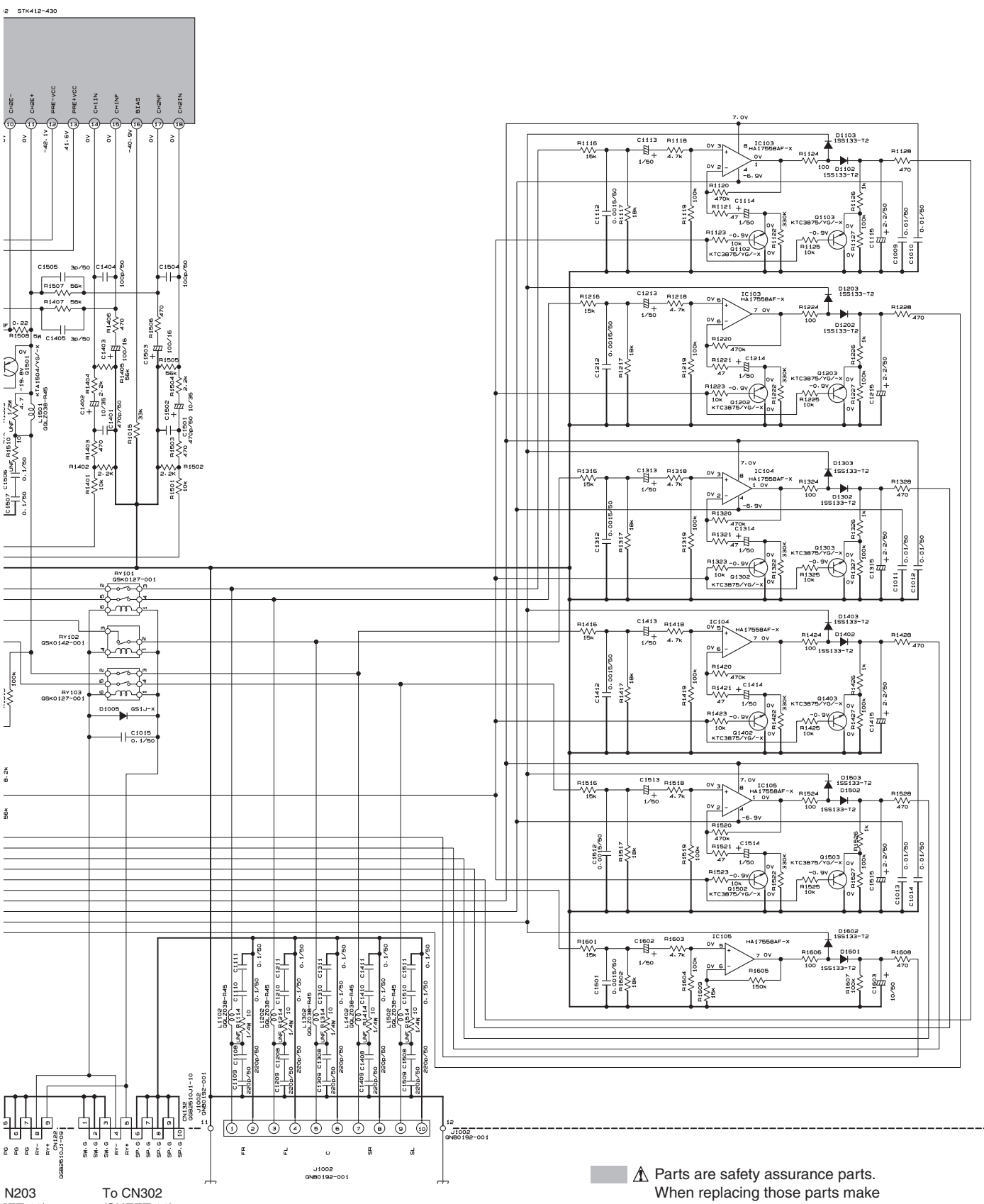
SHEET 9

<Subwoofer section>

■ Terminal section



NOTES:
1. VOLTAGES ARE DC-MEASURED WITH A DIGITAL VOLT METER OR OSCILLOSCOPE WITHOUT INPUT SIGNAL. CONDITION — POWER-ON. NO SIGNAL.
2. UNLESS OTHERWISE SPECIFIED.
   ALL RESISTANCE VALUES ARE IN OHMS.
   ALL INDUCTANCE VALUES ARE IN H.
   ALL CAPACITANCE VALUES ARE IN μF.



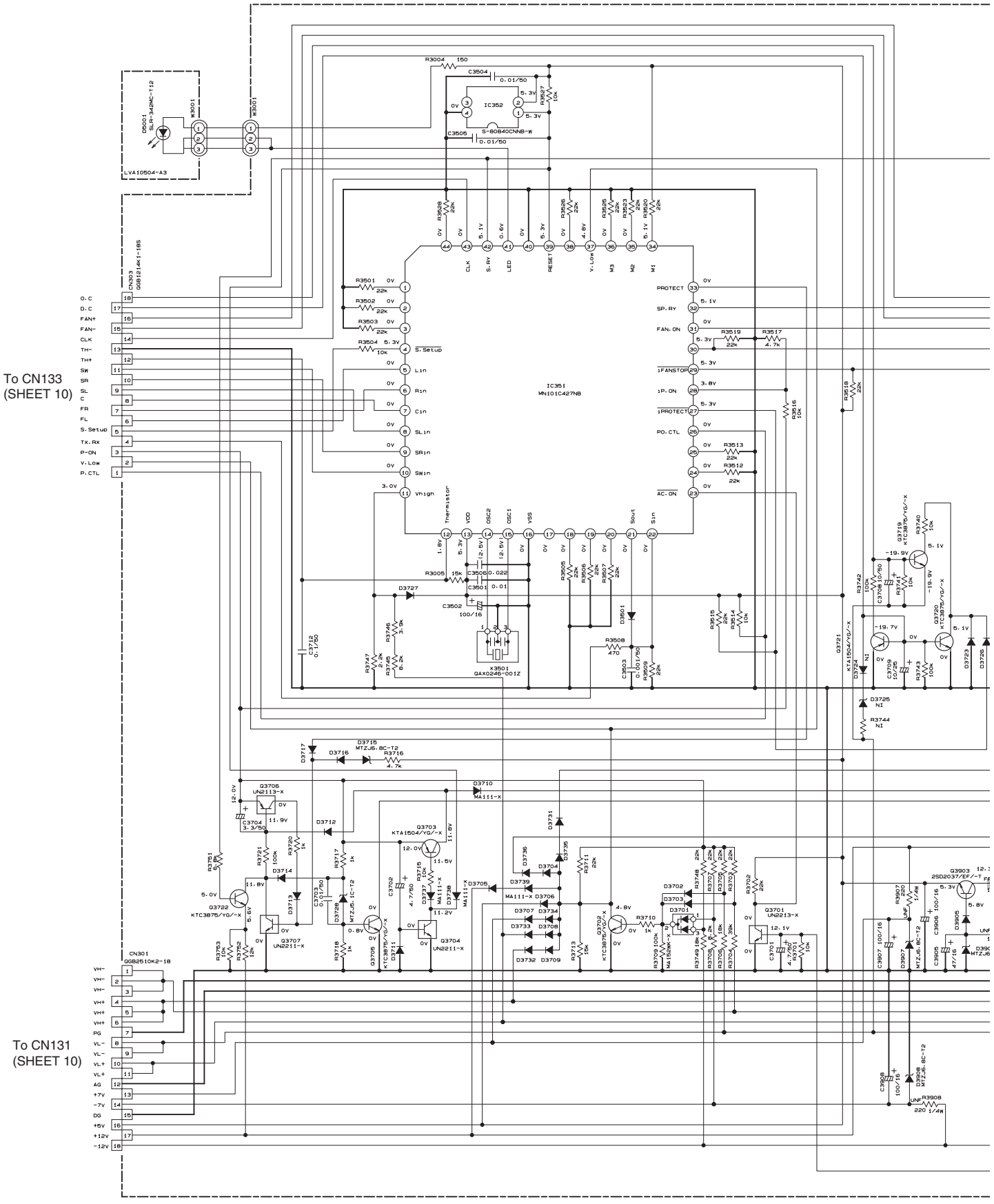
To CN203 (SHEET 12)

To CN302 (SHEET 11)

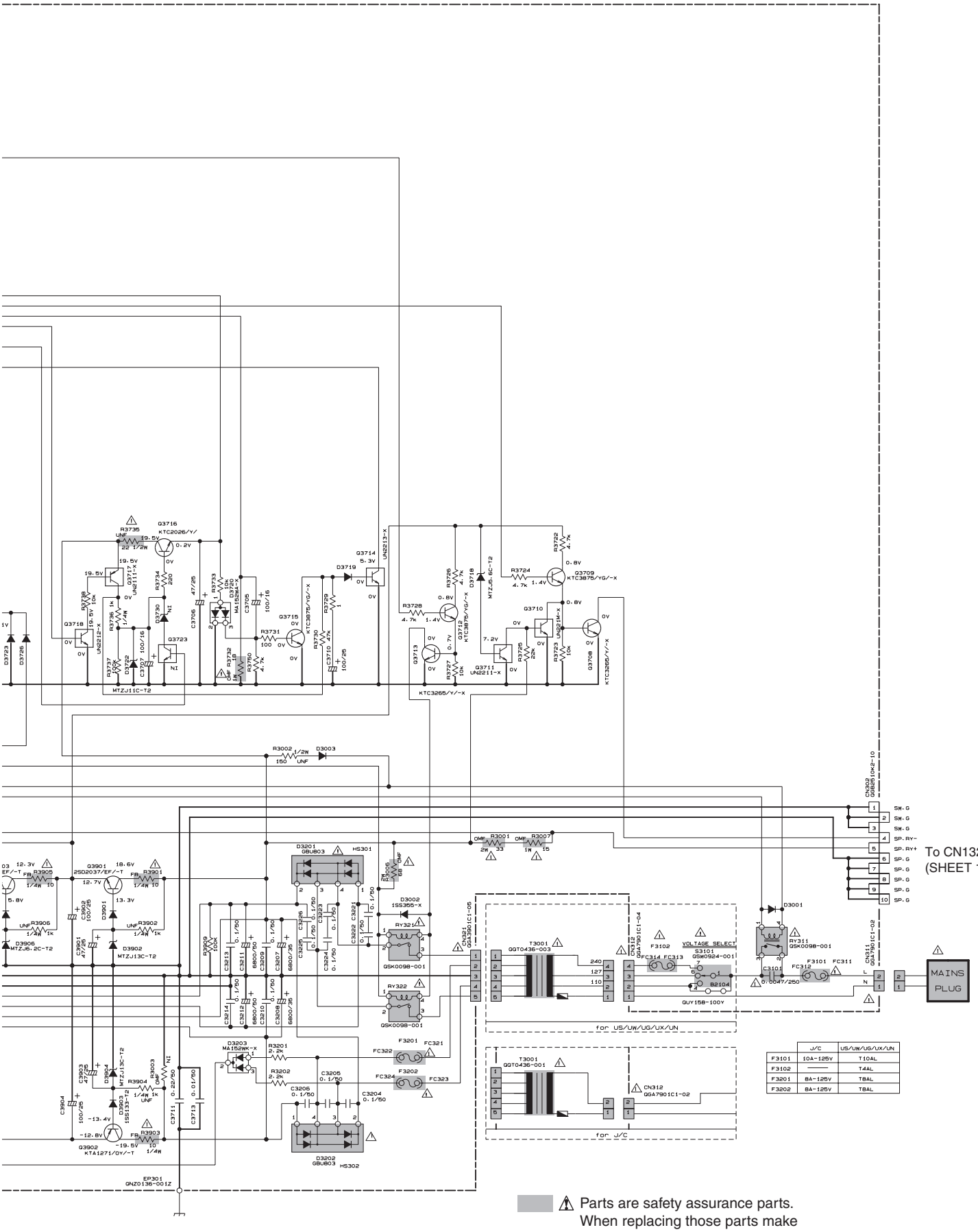
⚠ Parts are safety assurance parts. When replacing those parts make sure to use the specified one.

SHEET 10

■ Mother section



NOTES:
1. VOLTAGES ARE DC-MEASURED WITH A DIGITAL VOLT METER
   OR OSCILLOSCOPE WITHOUT INPUT SIGNAL.
   CONDITION — POWER-ON. NO SIGNAL.
2. UNLESS OTHERWISE SPECIFIED.
   ALL RESISTANCE VALUES ARE IN OHMS.
   ALL INDUCTANCE VALUES ARE IN H.
   ALL CAPACITANCE VALUES ARE IN μF. P IS pF.
   ALL DIODES ARE 1SS133-T2.

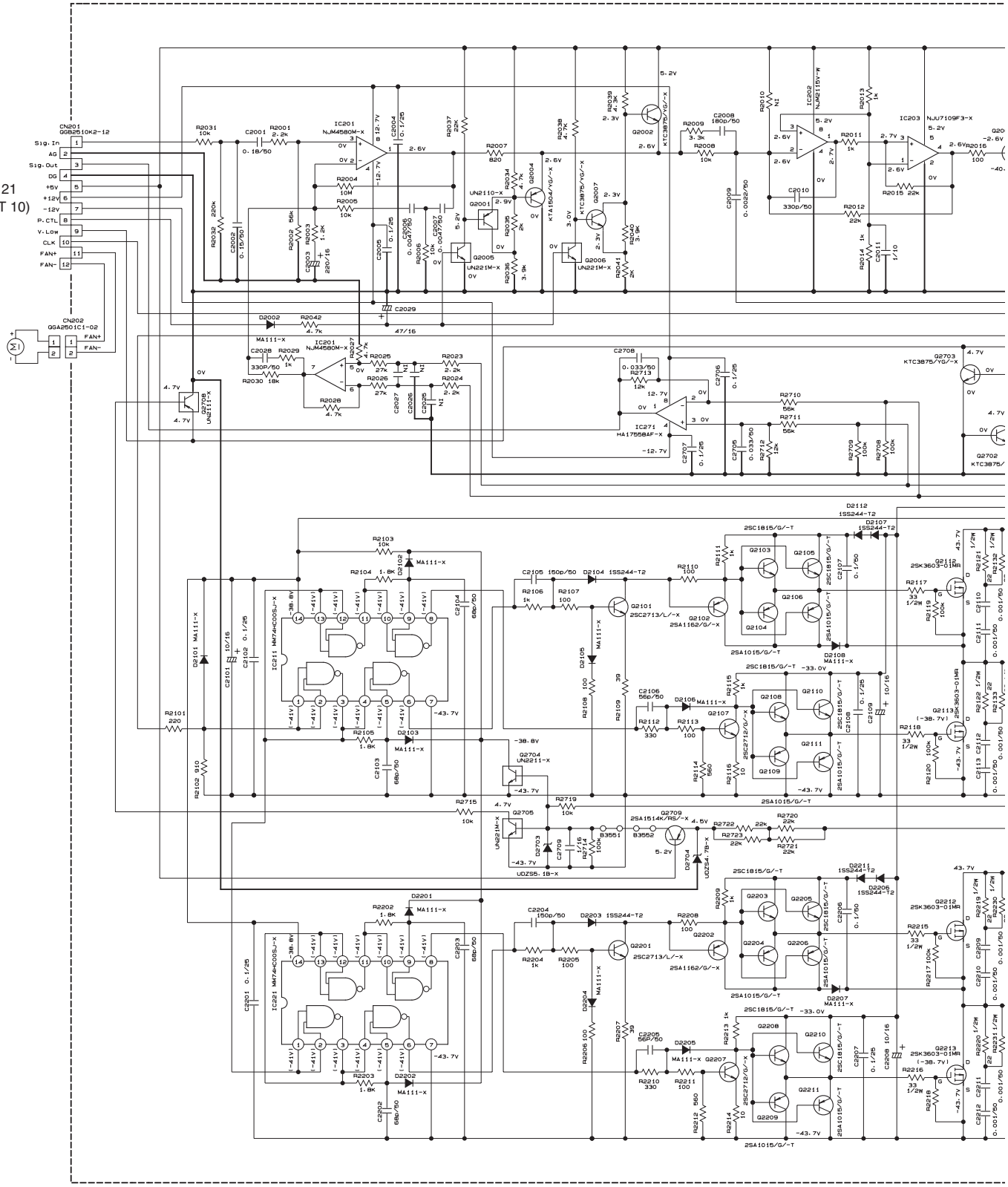


⚠ Parts are safety assurance parts.
When replacing those parts make sure to use the specified one.

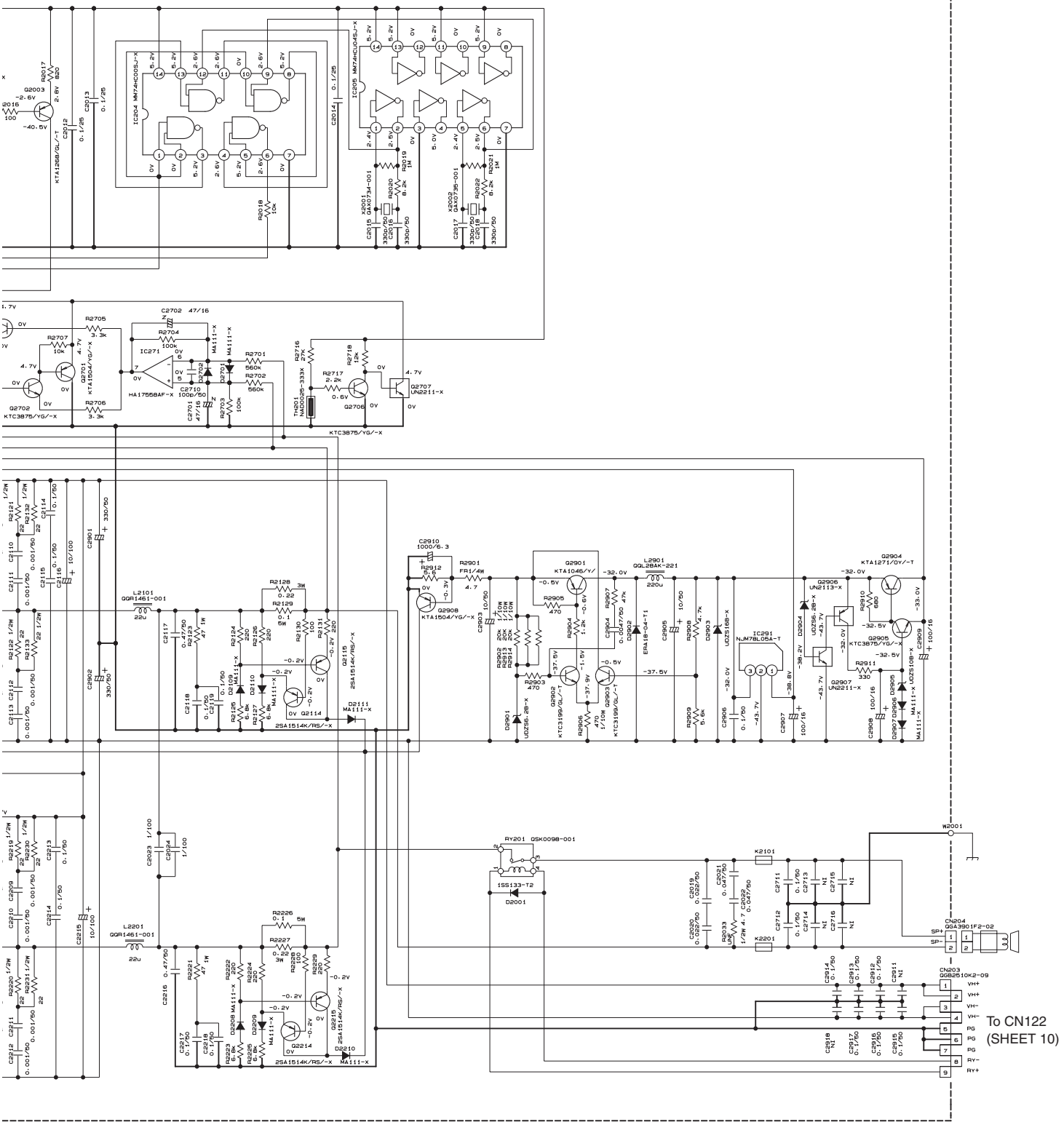
SHEET 11

■ Amplifier section

To CN121
(SHEET 10)



NOTES:
1. VOLTAGES ARE DC-MEASURED WITH A DIGITAL VOLT METER
   OR OSCILLOSCOPE WITHOUT INPUT SIGNAL.
   CONDITION —— POWER-ON. NO SIGNAL.
2. UNLESS OTHERWISE SPECIFIED.
   ALL RESISTANCE VALUES ARE IN OHMS.
   ALL INDUCTANCE VALUES ARE IN H.
   ALL CAPACITANCE VALUES ARE IN μF. P IS pF.

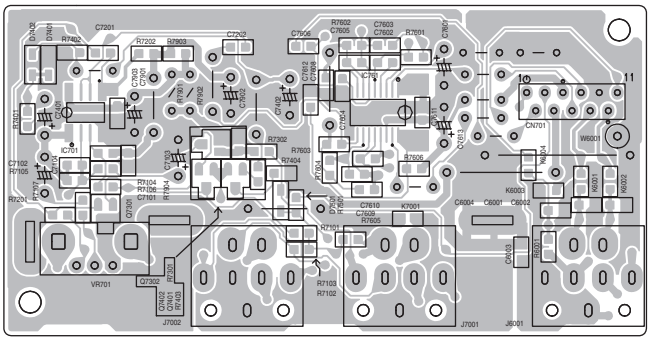


SHEET 12

Printed circuit boards

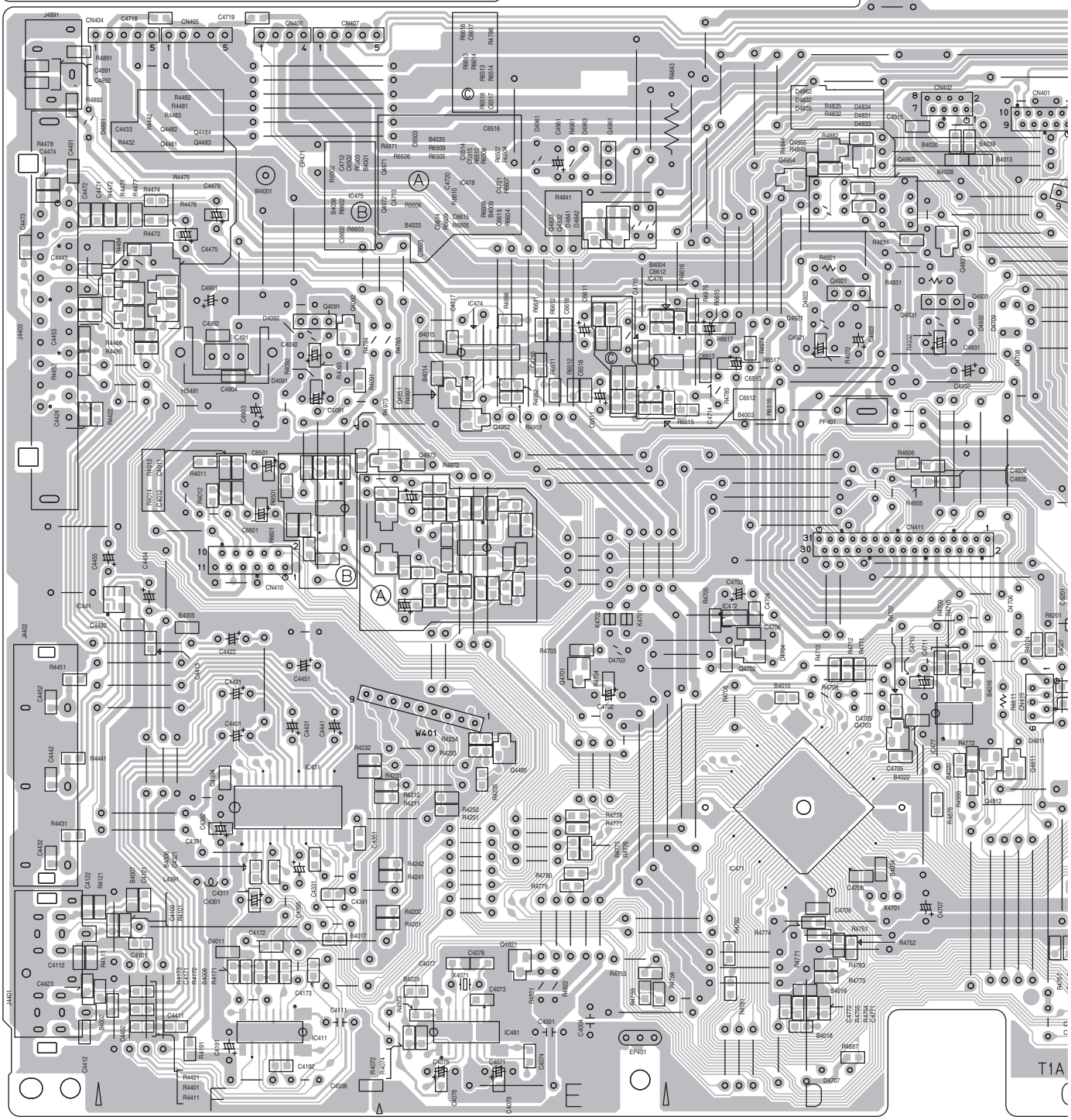
<Main body section>

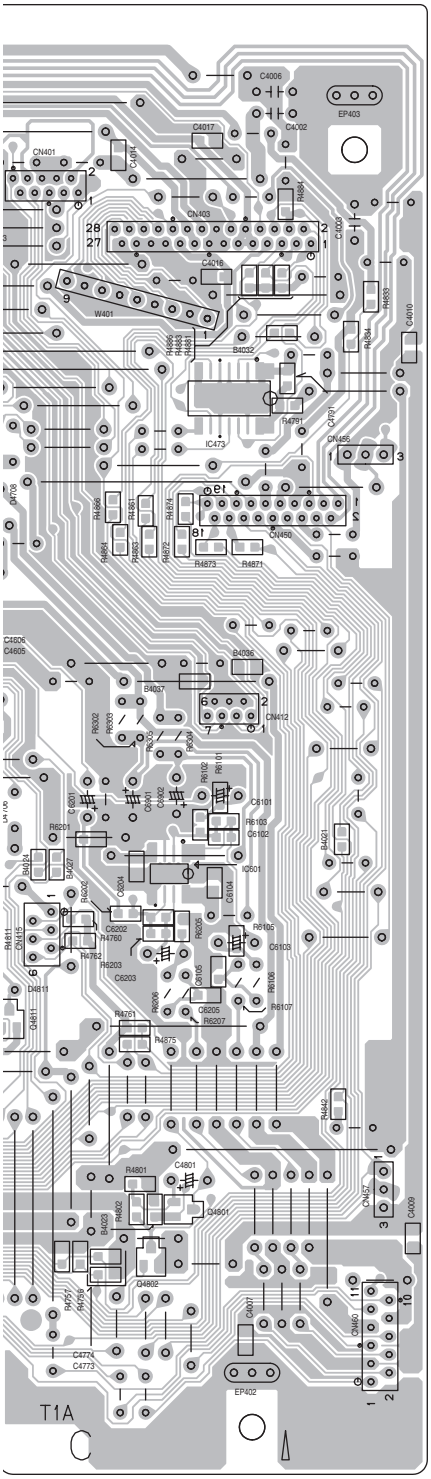
■ Main board



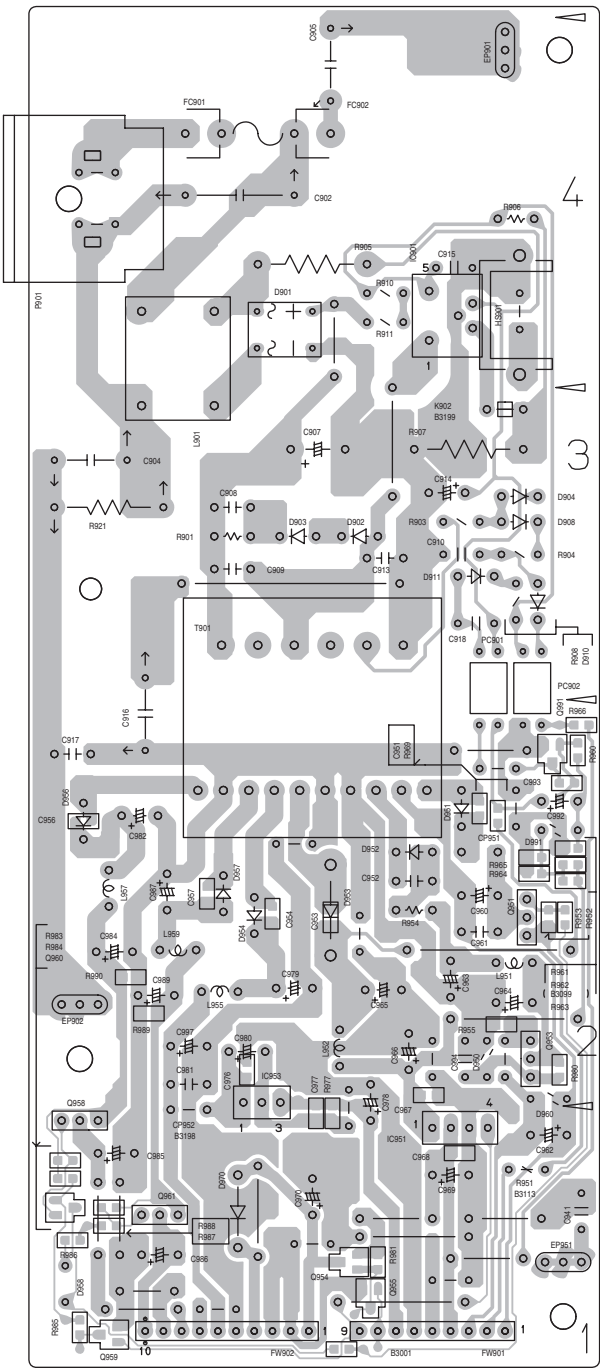
(Phone jack board)

(Main board)



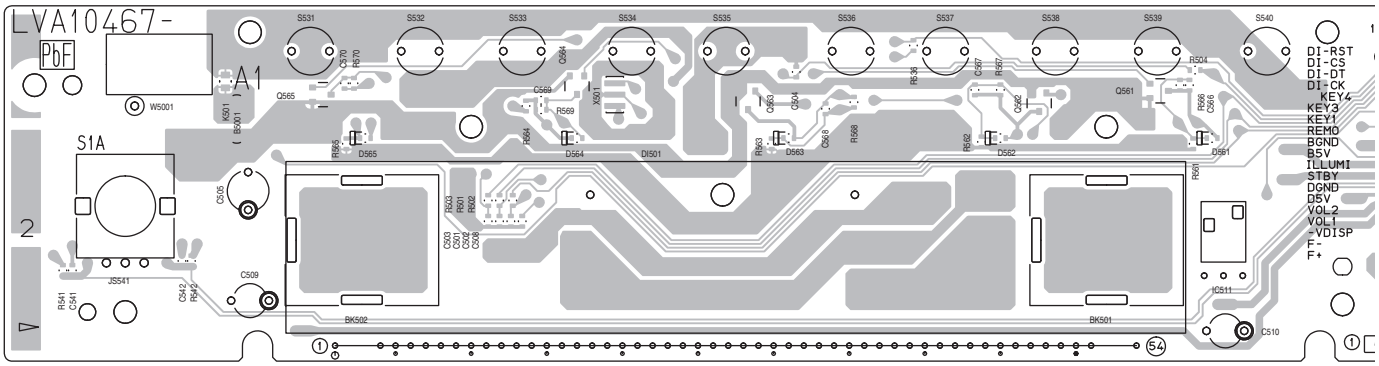


(Power supply board)



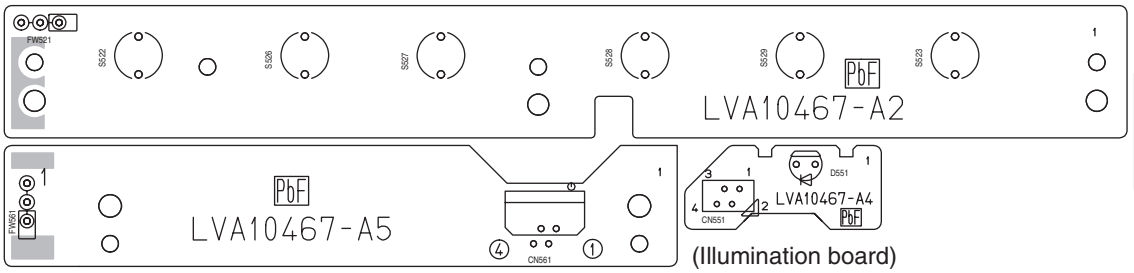
■ Front board

Forward side



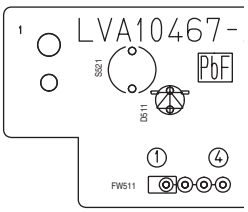
(Front

(Operation board)



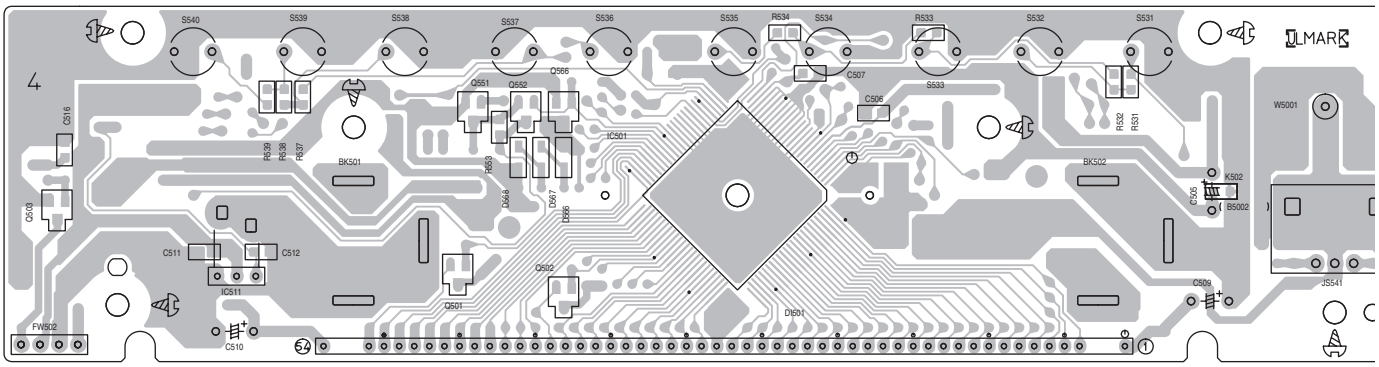
(Connect board)

(Illumination board)



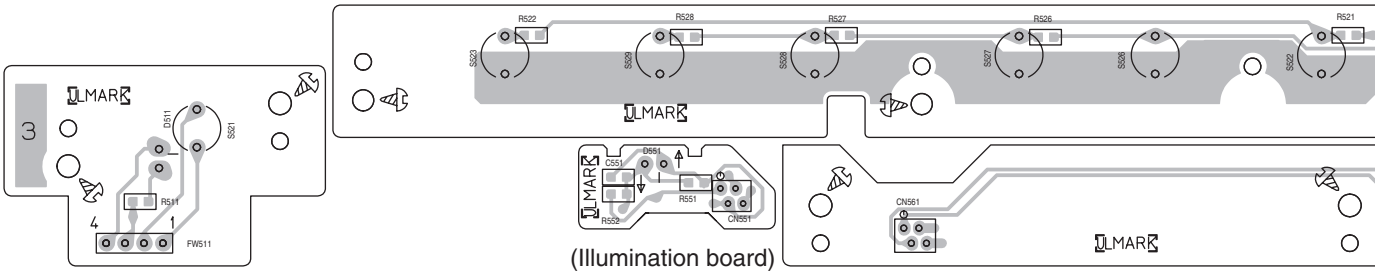
(Power key boa

Reverse side



(Front board)

(Operation b

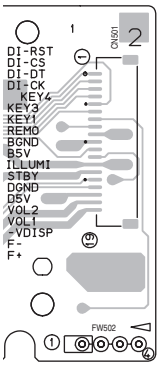


(Power key board)

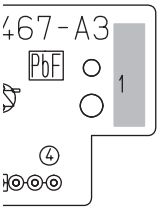
(Illumination board)

(Connect b

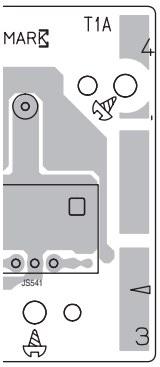
■ Audio board



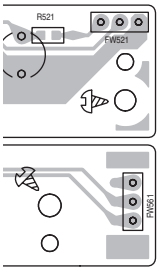
(Front board)



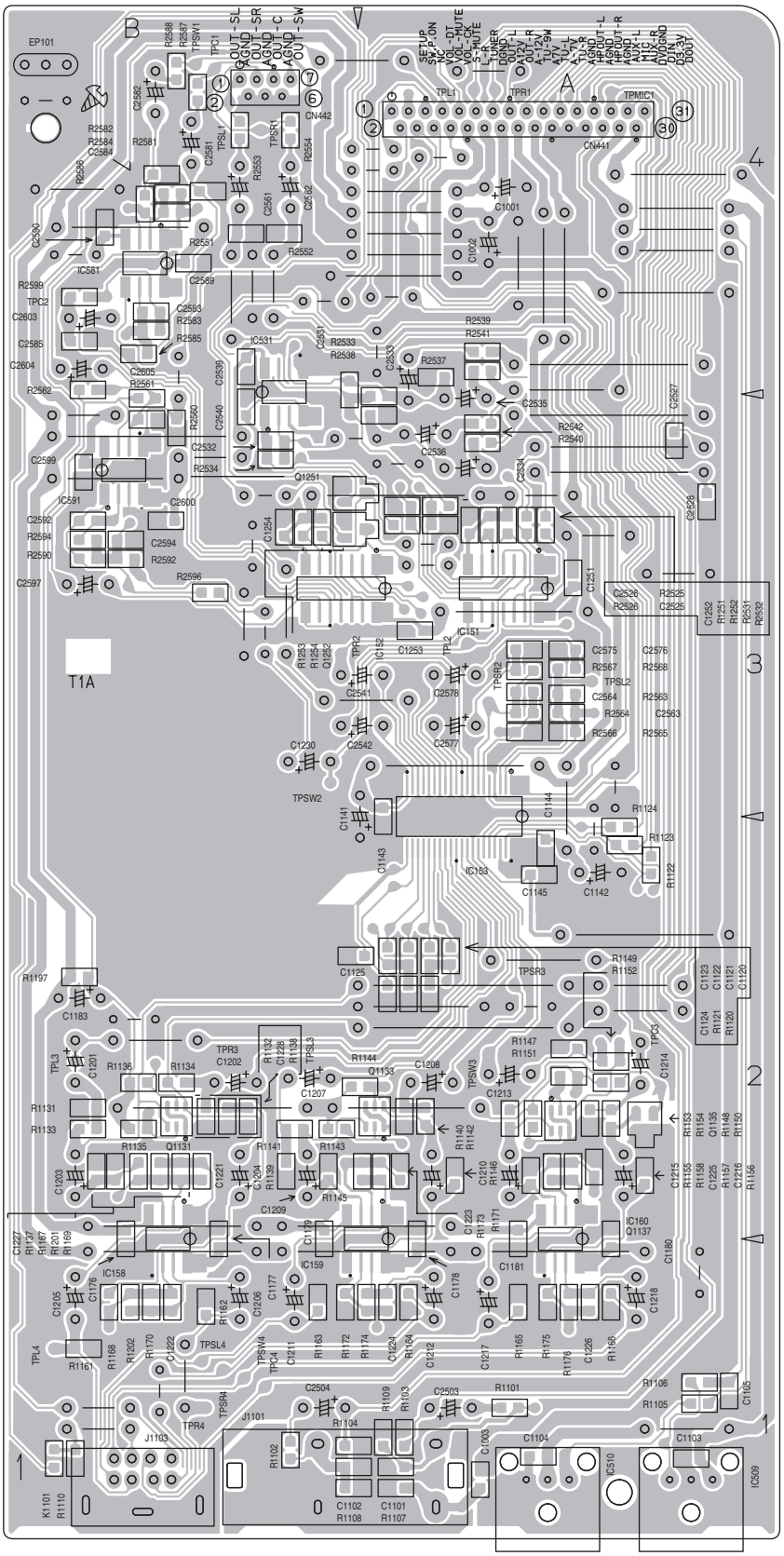
ey board)



ration board)



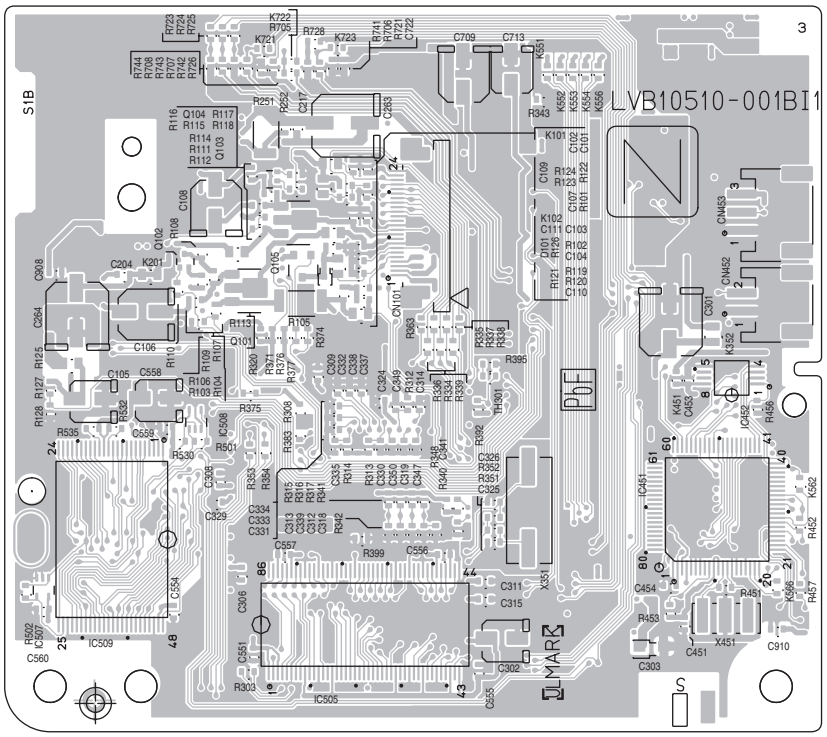
nnect board)



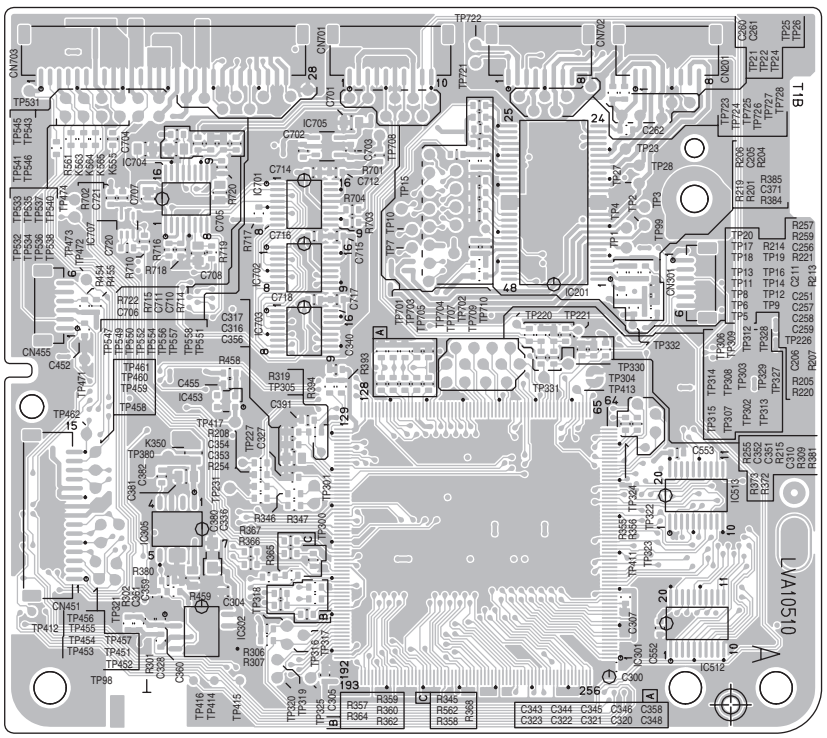
(Audio & Digital input board)

■ DVD servo board

Forward side

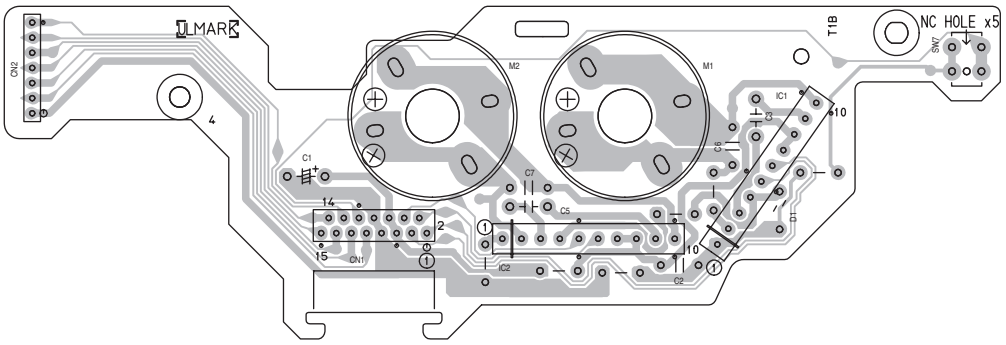


Reverse side

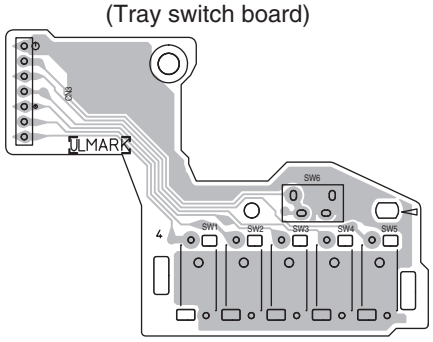


■ Loading board

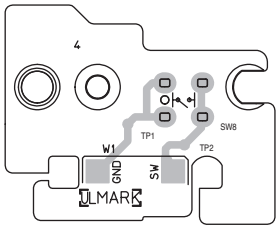
(Motor board)



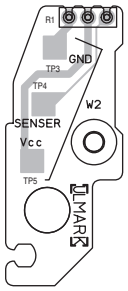
(Tray switch board)



(Switch board)

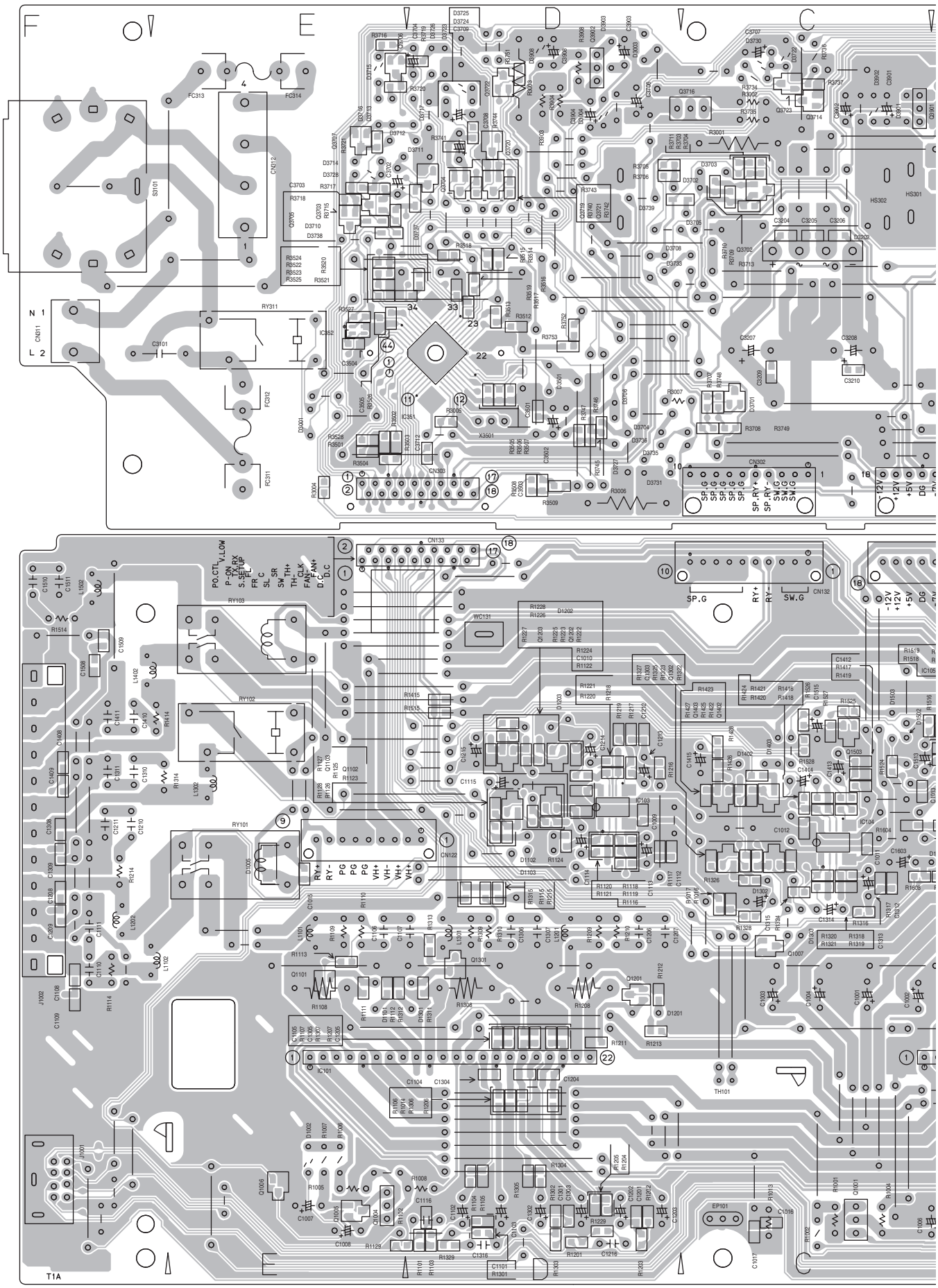


(Sensor board)

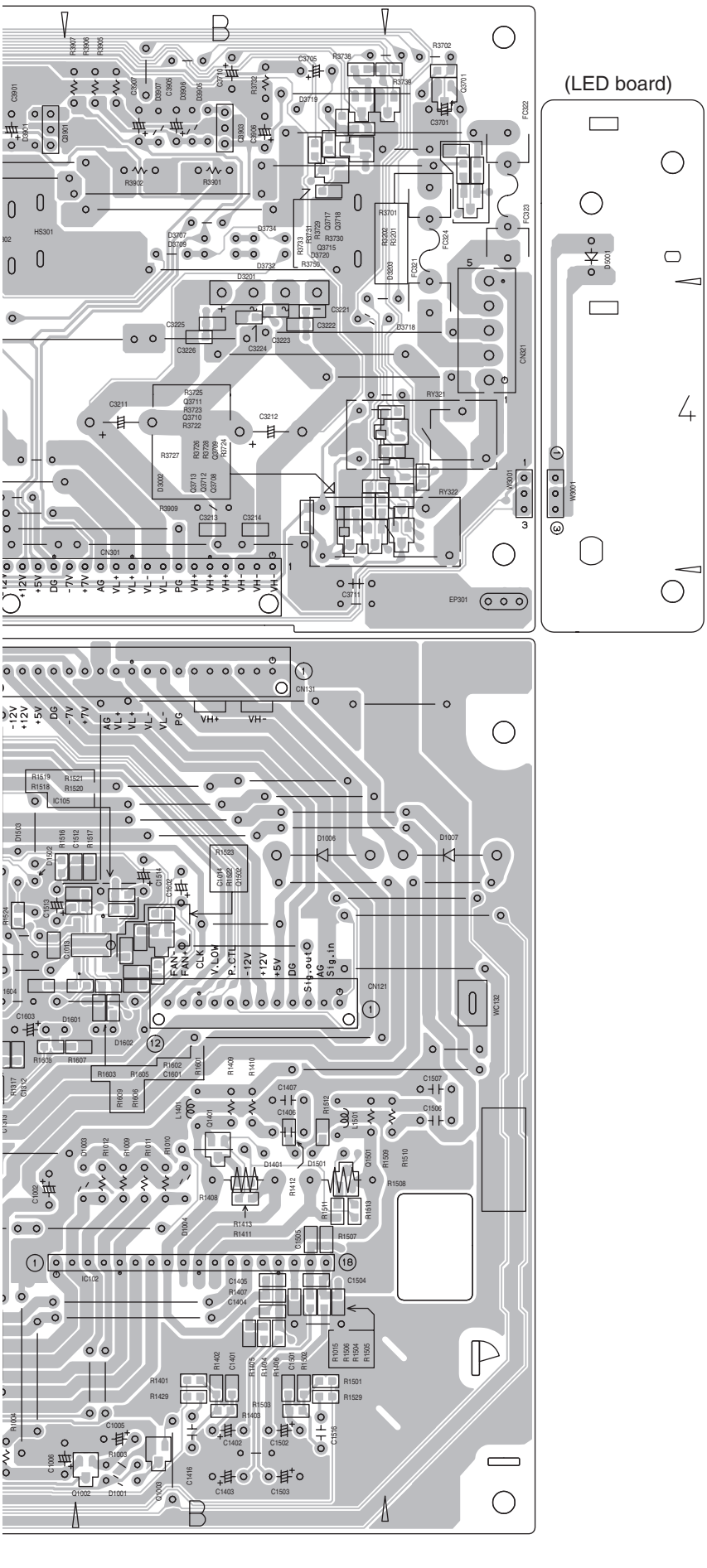


■ Subwoofer main board

(Power board)

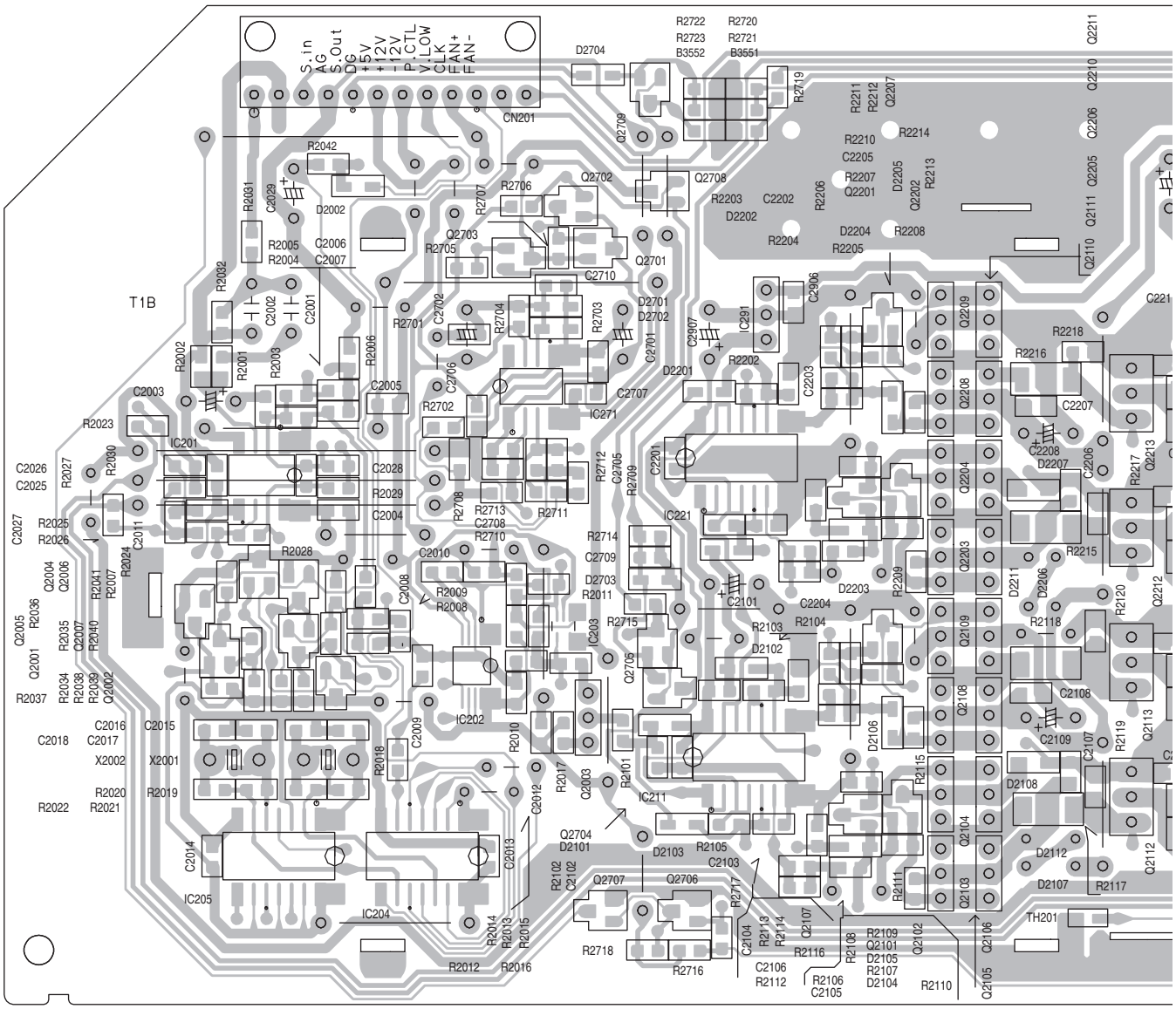


(Main board)

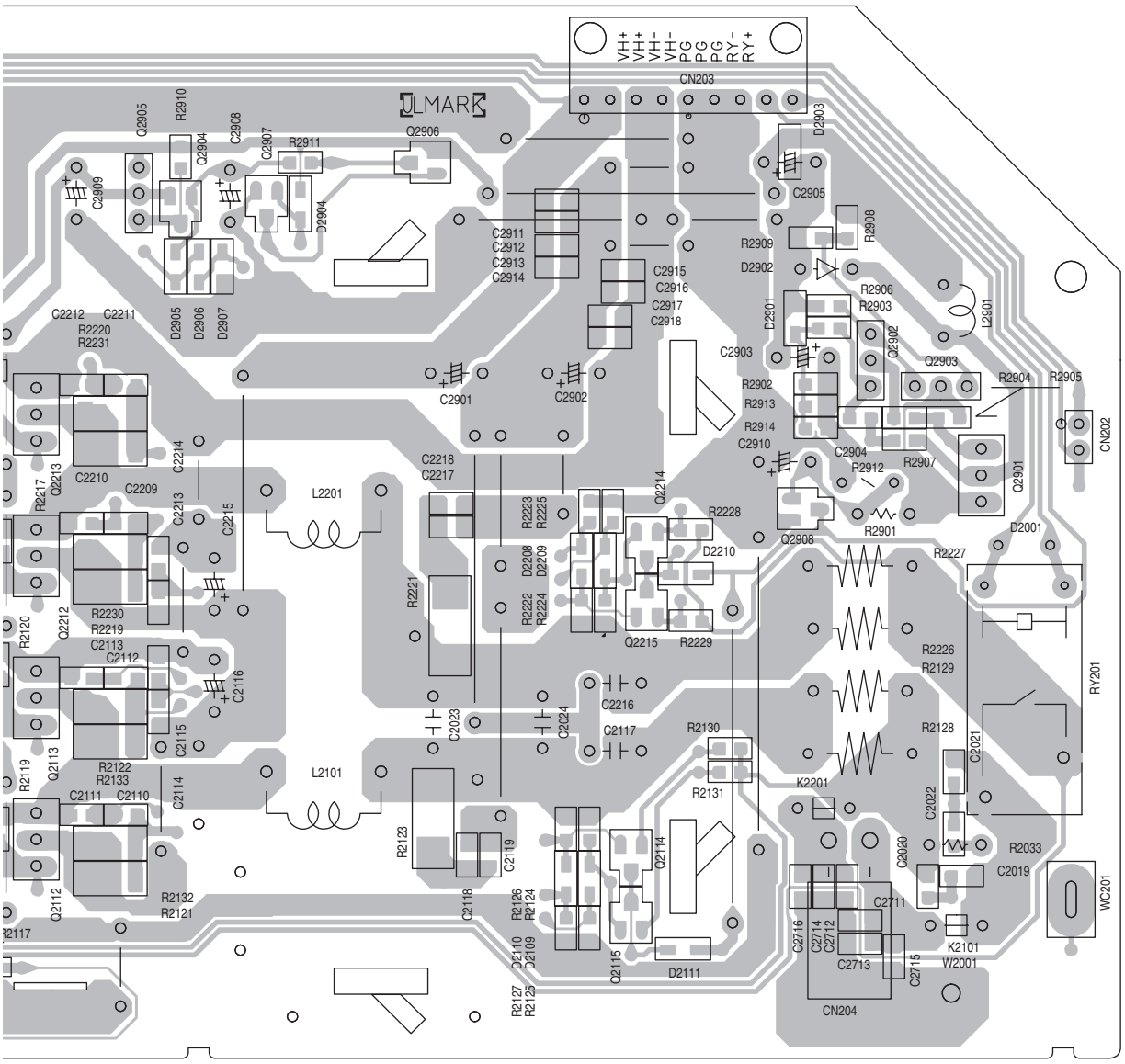

(LED board)
CN301
CN121
CN131
IC105
IC102
HS301
EP301
WC192
W3001
D5001

■ Subwoofer amp. board

(Amp. board)



)ard)


VH+
VH+
VH-
VH-
PG
PG
PG
RY-
RY+
CN203
LMAR
Q2906
Q2905
R2910
Q2904
C2908
Q2907
R2911
C2909
D2904
D2903
C2905
C2911
C2912
C2913
C2914
C2915
C2916
C2917
C2918
R2909
D2902
R2908
R2906
R2903
D2901
Q2902
L2901
C2903
Q2903
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R2905
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R2912
R2907
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R2223
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Q2214
R2228
D2208
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C2116
R2226
R2129
RY201
C2216
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K2101
W2001
C2713
C2715
D2110
D2109
Q2115
D2111
R2127
R2125
CN204

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